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ABSTRACT

These proceedings contain the following seven papers: "An Examination of Community Pluralism, News Framing, Source Use and Conflict of an Environmental Issue" (Cynthia-Lou Coleman and others); "The Effectiveness of 'How' Graphics and Text in Conveying Basic News Story Information" (Jeffrey L. Griffin and Robert L. Stevenson); "Supermarket Tabloids as Sources of Political Information" (Elizabeth K. Hansen and Carmen Manning-Miller); "The Disability Press: A Descriptive Study" (Carmen L. Manning-Miller); "Relationships of Gender and Rape Myth Acceptance on Sexual Perceptions of Music Videos" (Harriet A. Roland); "A Longitudinal Study of Agenda Setting for the Issue of Environmental Pollution" (Christina R. Ader); and "A Cognitive Model of Communication Processes and Acceptance of People with AIDS" (Mahmoud A. M. Braima). (NKA)

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PROCEEDINGS OF THE ANNUAL MEETING OF THE ASSOCIATION

FOR EDUCATION IN JOURNALISM AND MASS COMMUNICATION

(76th, Kansas City, Missouri, August 11-14, 1993).

More Miscellaneous Studies.

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An Examination of Community Pluralism, News Framing, Source Use and Conflict of an Environmental Issue

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An Examination of Community Pluralism,
News Framing, Source Use and
Conflict of an Environmental Issue

Literature Review

Overview

The case of siting a copper mine in a small, Mid-Western community has provided us with a propitious opportunity to examine the influences of community structure on news coverage. Issues embedded in the case study are multi-faceted, and incorporate questions of risk, science, technology, environment, politics, religion--the social fabric of a community. However, we expect that newspapers will focus on a fraction of the range of available issues that might be potentially explored.

Researchers have noted, for example, that reporters give short shrift to the science aspects of issues in favor of the conflict that gives rise to newsworthy story pegs (Friedman, 1989; Nelkin, 1989).

Others have suggested that coverage--particularly of environmental and technological issues--suffers from the same disembodiment of other news stories. That is, news is fractionalized, delivered without a social context or history, and reduced to information nubs or bytes--without context

(Bennett, 1988; Landsman, 1987; Perry, 1988).

Scholars in the science and risk communication fields have noted that this type of coverage tends to give readers and viewers an overly narrow view of important topics ranging from siting nuclear waste deposits to use of pesticides on foods.

Two constructs speak to the issue of news construction. The first, community pluralism, posits that community structure influences what gets covered, and how the media cover information. The second construct, story framing, suggests that cultural packages--created by power brokers--comprise news. Both are discussed below.

Community pluralism

Researchers have proposed that news coverage varies as a function of macrosocial structures, including social and political community patterns (Griswold, 1990; Tichenor, Donohue & Olien, 1980; Rossow & Dunwoody, 1991). News is a product of the complex relationships among social systems, and reflects the power structures within communities (DeFleur & Ball-Rokeach, 1989).

One postulate that relates to community structure and news systems is that coverage will vary according to the degree of political and social diversity within the community. Tichenor, Donohue and Olien (1980) articulated differences in news coverage

as a function of the degree of pluralism, which they define as: "The extent to which one community is characterized by a greater diversity of potential sources of social power than another community" (p. 40).

Homogeneous communities, which are less pluralistic by definition, tend to be smaller (by population) than socially heterogeneous and politically pluralistic communities; have fewer social elites; and fewer centers of power. Decision-making is carried out informally and interpersonally, and disputes are settled before they reach the printed news page. Social disruption is eschewed and consensus is embraced, especially by small-town newspapers. In contrast, community conflict in more pluralistic communities is more likely to be given a public hearing in mass media channels (Tichenor, Donohue & Olien, 1980).

Several studies have supported the thesis that pluralistic communities are more likely to cover stories about conflict and controversy than less pluralistic communities (Cole, 1973; Donohue, Tichenor & Olien, 1973; Dunwoody & Rossow, 1989; Griffin & Dunwoody, 1992). We argue that avoiding conflict can take several forms, resulting in fewer sources interviewed, the use of subtle tactics that delegitimize oppositional viewpoints, and fostering a community booster role. We therefore propose that:

Hypothesis 1. In the context of covering the copper mine issue, newspapers within communities characterized as politically, socially and economically pluralistic will be more likely to use conflict and controversy frames than newspapers from less pluralistic communities.

Framing

On one level, scholars have used "framing" to describe a sort of "packaging" of news (Gamson, 1988; Gitlin, 1980; Griffin & Dunwoody, 1992). On another level, news frames are not only a function of "packaging," but also a function of what readers interpret frames to mean. In other words, frames do not exist outside of the readers' interpretation of these frames--a shared meaning that arises from the interaction of story frame with the reader's frame. Gamson and Modigliani (1989) have approached media frames as interpretive packages that give meaning to an issue, and at their core, packages have central organizing ideas. They noted that packages evoke "cultural resonances" that give frames meaning. Kinder and Sanders (1990) have added that frames provide "the essence of the issue" and are:

Devices embedded in political discourse, invented and employed by political elites, often with an eye on advancing

their own interests or ideologies, and intended to make favorable interpretations prevail (p. 74).

For the current project, frames are considered interpretive packages that capture the central focal points of news stories. Frames should tell us the essential nature of the news story--what the story is all about. We argue that frames may indeed arise from political elites or claims-makers with the intention of conveying information with a particular accent or emphasis (Best, 1989; Cobb & Elder, 1972; Gandy, 1980, 1982).

Boosterism

Some scholars argue that the role of the community press is to build consensus, and thus engage in a certain amount of community boosterism (Fredin & Kosicki, 1989; Tichenor, Donohue & Olien, 1980). We argue that boosterism takes the form of promoting business and jobs within the community. Note, however, that not all business ventures that promise economic rewards will be embraced by the community: A business that is seen as imposing its will on an unwilling community may be branded as an "outsider." Citizens and local press may rally against the perceived intruder. An example might be the siting of a nuclear waste repository that, while promising jobs, appears to be conducting business unfairly or undemocratically (Coleman, 1989).

In the case under study, however, we believe that community opinion leaders are largely in support of the copper mine and its economic provisions. In this regard, we argue that the role of the local press will be to foster business boosterism, whereas communities from larger metropolitan communities will be less likely to engage in such boosterism. We propose that:

> Hypothesis 2. Newspapers in less pluralistic communities will be more likely than newspapers from more pluralistic communities to foster a news frame that promotes economic ventures related to the mine.

Sources and Channels

News coverage is a function of entwined relationships with power structures--bureaucracies--and their officials. As a result, reporters rely on particular types of individuals as credible sources (Fishman, 1980; Lasorsa & Reese, 1990; Sigal, 1973). However, the relationship of sources to the news organization is not typically examined against the backdrop of community pluralism. One study that did compare coverage in regional press and national press in a pluralistic context found that regional, daily newspapers used a broader array of sources from different backgrounds, and engaged in more enterprise

reporting than the national dailies[1] (Brown, Bybee, Wearden & Straughan, 1987).

At first blush, these findings seem to dispute the thesis that more pluralistic communities are more likely to use a wider array of sources and a wider breadth of channels, since Brown et al. found that regional dailies, rather than the national dailies, were more pluralistic in their coverage. We argue, however, that the influences of pluralism should be examined within a wider spectrum of communities. That is, we propose looking at a slightly different range of newspapers, from small-town, homogenous weekly newspapers to more regional, daily press. We argue that source-reporter relationships may differ along this structural continuum. We also argue that newspapers from less heterogenous communities will have a more limited range of story sources, compared to newspapers embedded in a community with greater heterogeneity.

Hypothesis 3. Newspapers in less pluralistic communities will be more likely than newspapers in more pluralistic communities to use official government

[1] The Brown study uses Sigal's (1973) operational definition of story channels, which include routine channels (official proceedings, press releases, press conferences, informal channels (background briefings, leaks, non-governmental proceedings) and enterprise channels (interviews, spontaneous events and independent research).

sources in news stories about the mine.

The literature consistently reports that groups characterized as outside the social and political mainstream are less likely to be heard over mass media channels than are mainstream groups. When "outsiders" are described, they are characterized as foolish, dangerous or rabble-rousing (Gitlin, 1980; Shoemaker, 1984; Landsman, 1987). We argue that this characterization should be examined along the pluralistic continuum. In this respect, we have proposed that the press from more heterogeneous communities will be more likely than newspapers more homogeneous communities to allow oppositional voices a chance to speak to the copper mine siting.

> Hypothesis 4. Newspapers in more pluralistic communities will be more likely to use "oppositional" sources--those opposed to the mine--than newspapers in less pluralistic communities.

Background: The Mining Controversy

Before embarking on the methods section, we present a brief overview of the mining controversy.

Several thousand acres have been marked for mineral exploration and extraction in Wisconsin, and not without

controversy. The Flambeau copper mine was officially set in motion when a notice of intent was filed in 1987 to begin the permitting process to construct the mine in Rusk County. The Wisconsin Department of Natural Resources (DNR) was required to publish draft and final environmental impact reports on the mine, in addition to holding public hearings that resulted in extensive media coverage. Several groups opposed the Flambeau Mine, citing environmental concerns over effects to groundwater, Flambeau River, wildlife, fishery, etc. In addition, the Lac Courte Oreilles Indians of the Ojibwe Nation, who retain hunting, fishing and gathering rights on the ceded territory near the mine, claimed they were not consulted in the permitting process, and argued that treated wastewater from the mine would damage resources.

From a news perspective, the issue of mining was kept alive on the press pages as a result of a variety of events including legal hearings, demonstrations and pickets, arrests, court injunctions, and press conferences, which were concentrated in the summer months of 1990 and 1991. Not long after the final public hearing process in the summer of 1991, endangered species (a clam, a minnow and a dragonfly) were discovered in the Flambeau River, and mining construction was halted after The Lac Courte Oreilles and the Sierra Club won a temporary court injunction. Work on the mine started once again after the courts

ruled there was not enough evidence to support the contention that the discharge into the river from the mining operation would affect the endangered species.

Proponents of the mine argue that the benefits to the community--jobs and income--outweigh any adverse social and environmental effects. They also have argued that state environmental laws are stringent, and would thus prevent degradation to the landscape or wildlife. Mining officials have pointed out that the DNR endorsed the mine because the mine company has met the necessary legal and environmental requirements.

Opponents of the mine have argued that the stringent laws were written in consultation with mining officials, implying governmental corruption. Specifically, opponents accused a top-level state administrator--a former lobbyist for one of the companies that has sought to explore mineral development--of collusion. In addition, opponents argue that technical requirements may not be rigorous enough to protect wildlife and water.

Methods and Operationalizations

Unit of Study

We selected 10 newspapers that we believed would devote attention to the copper mine siting issue. Several were chosen

because of their geographical proximity to the proposed mine, while others were selected because of their large, state-wide circulation. Our goal was to find a mix of newspapers from different sized communities. In all, six daily and four weekly newspapers were chosen for the analysis.[2]

We limited the time period of our study to June, July and August, 1991--three months of extensive media coverage. The time period included numerous newsworthy events, including public meetings, protest demonstrations, lawsuits and court decisions.

All news articles that mentioned the Flambeau copper mine and issues specifically related to the siting were included in the analysis. Indexes were not available for these publications: coders examined each newspaper for possible mine stories. For the two metropolitan dailies, we conducted a computer search using such terms as mining, Flambeau Mine, Ladysmith, copper, Kennecott corporation, etc. Only news and feature articles were examined. Letters to the editor, editorials, cartoons, and advertisements were omitted. In all, 182 articles were identified as appropriate to the study.

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[2] Daily newspapers included the Wisconsin State Journal, Milwaukee Journal, Eau Claire Leader Telegram, Wausau Daily Herald, Superior Evening Telegram, and the Chippewa Falls Herald Telegram. Weekly or occasional newspapers were the Rice Lake Chronotype, Ladysmith News, Phillips Bee and the Sawyer County Record.

Content Analysis

Story themes. We first analyzed a sample of news articles from several papers to determine the most prevalent themes in the siting issue. Three coders identified 10 broad, thematic categories that seemed relevant to the news content. Generally, news centered on the following themes: (1) conflict or controversy, (2) legal, (3) political, (4) economics, business or jobs, (5) mining development or manufacturing, (6) science or technology, (7) environment and wildlife, (8) community affairs and impact, (9) morality and ethics and (10) Native American.

These theme categories were used in coding four, different content areas of the newspaper article: headline, news peg, paragraph, and overall theme.

Headline. Each headline was coded according to which of the 10 categories seemed to describe best the headline theme (conflict, science, ethics, etc.). Coders attempted to assign only one category to each headline, but in the case of a headline that described two elements equally (science as well as legal issues) then the headline received a code for each theme. Coders noted whether the theme fit very well, somewhat, or not at all.

News peg. Coders identified the lead of the news story--we called it the news peg--containing the story's main thrust. In most cases, the lead was found in the first paragraph (who, what, when, how and why), although the lead was occasionally extended

to the second paragraph. The peg was coded along the same 10 categories as the headline. Again, coders noted whether the theme fit the peg well, somewhat, or not at all.

Paragraphs. Each paragraph was analyzed and given one theme code. For example, if the first paragraph was the announcement of a court decision, it was coded as having a "legal theme." If the second paragraph contained information about the effects of the court decision on local citizens, it was coded as "community impact." In our analysis, we limited the study to the first 10 paragraphs of each news article (10 paragraphs was the average story length).

Overall theme. The 10 categories were also used to assess the story's overall theme. Since this type of coding is arguably subjective, coders met on three, separate occasions to check intercoder agreement about themes (and other coding). Coders agreed that is the main thrust of the story was not a single theme, then more than one theme could be used to describe the article, and coders noted whether the theme fit well, somewhat or not at all.

Metaphors. We also examined the use of metaphor in news stories, following the logic that metaphors can be used as an effective method for capturing frames. Gamson (1988) observed that frames are distilled into metaphors: "It is possible to display the package as a whole with a deft metaphor, catch-phrase

or other symbol device" (p. 166). Lakoff and Johnson (1980) for example, have asserted that what is up, is good. An example of this is the characterization of individuals who oppose the mine as metaphorically "outside."

To determine metaphors, we examined press materials, pamphlets, booklets, and lectures produced by key groups in the mine controversy. The argument for using such raw materials (information subsidies) to construct the basis for the metaphors is supported by the literature that proposes strong ties between sources and reporters (Gandy, 1980).

We identified 13 metaphors, and examined stories for the presence of the following: (1) war metaphor, (2) thief in the night, (3) confidence game, (4) magic or alchemy, (5) rape, (6) environment as mother, (7) future generations, (8) business partnership, (9) economic boost, (10) social progress, (11) personification of data, (12) mine as machine, and (13) role and stage metaphor.

Indexes

Once coding was complete, we attempted to consolidate story elements and metaphors by combining them into additive indexes. We theorized that news frames could be operationalized as an index containing the topical themes found in headlines, story leads or pegs, paragraphs and metaphors. We identified six, main

indexes which we call "story frames." Following are the story frames and the reliability alphas.

Economic Frame. Includes economics, jobs, or business theme, economic peg, economic paragraphs, economic headline and economic boost metaphor (alpha = .69).

Ethics Frame. Includes ethics peg, paragraph, headline, and theme (alpha = .64).

Environment Frame. Includes environment (and wildlife) peg, paragraph, headline and theme (alpha = .72).

Science Frame. Includes science (and technology) peg, paragraph, headline and theme (alpha = .66).

Community Frame. Includes community affairs (and impact) peg, paragraph, headline and theme (alpha = .73).

Conflict Frame. Includes conflict headline, theme, peg, paragraphs and war and rape metaphors (alpha = .72).

Sources

We coded each source used in stories by name, gender, title, and affiliation. We were particularly interested in the source's affiliation, and whether the speaker represented an "official" government organization--such as the DNR or the courts--or more local government (such as county or city). We also noted whether the source's affiliation was a mining group, business organization, protest group, American Indian nation, or wildlife

organization. We then collapsed these affiliations into four main groups: (1) Official government sources, which included the DNR, federal government, courts and elected officials; (2) County and city government sources; (3) Anti-mine sources, which included fishing, wildlife and nature organizations, the Sierra Club, protest groups and Native Americans; and (4) Pro-mining sources, which included mining companies, mining contractors and sub-contractors, and pro-mining organizations.

Intercoder agreement

Three researchers coded the stories, and met on three occasions to check intercoder reliability. Coders reviewed several articles during each check-point to discuss agreement. Achieving complete agreement between three coders was unlikely, but we were reassured that, looking at a sample of data that all members coded, we achieved agreement of at least 63 percent, and in some cases, 100 percent agreement. Generally, there was consistently high agreement on coding where we counted the number of lines, words or paragraphs; recorded page numbers; and identified sources by title, affiliation and gender.

In sections where we chose from 10 categories for the story themes, there was better agreement than chance alone would predict. That is, the probability of achieving agreement among two coders when 10 choices are available is one in 10, or 10

percent. With three coders and 10 choices, the chance of agreement is 1 in 100, or 1 percent. When we examined coding of themes, news pegs, headlines and paragraphs, intercoder agreement ranged from 38 percent to 100 percent. In most cases, we achieved 63 to 88 percent agreement.

Pluralism

We ranked the 11 communities on a pluralism scale adapted from Rossow and Dunwoody (1991) and originated by Tichenor, Donohue and Olien (1980). For this analysis, we gathered information that reflected the diversity within each community. Our scale included (a) community population size, (b) per capita income, (c) the proportion of minority income to non-minority per capita income, (d) number of mass media outlets within the community, (e) proportion of minority students to non-minority students enrolled in public schools, grades K-12, (f) number of different types of religious organizations, and (g) number of community civic, volunteer and social organizations. Each indicator of pluralism was ranked from smallest to largest, and ranked from 1 (low) to 11 (high). We then ranked the communities into three groups that ranked low, medium and high pluralism. [The Pluralism Index is contained in the Appendix.]

Results

Themes

Overall, news stories during the three-month period focused on mining development, controversy and legal issues.

Looking at all story themes, we found that mining development was the most commonly used theme (27 percent of all themes were mining development). Conflict was a central theme 23 percent of the time (note that a story may contain more than one theme). Of the themes, legal issues were dominant in 19 percent of the stories, and environmental and wildlife issues were present in 14 percent of the stories as shown in Table 1.

A similar pattern emerged when examining news pegs. Mining development, conflict and legal issues were the most frequently occurring topics in story leads.

A slightly different pattern emerged when considering individual paragraph frames only. Legal issues (25 percent) and conflict (20 percent) occurred most often in paragraph themes, followed by environmental and wildlife concerns (19 percent).

Metaphors

We found that writers did engage in metaphors to describe the siting of the mine. The most commonly used metaphor among our pre-chosen categories was "Mine as War" (24 percent of all metaphors). In covering the issue, writers and their sources

often described the controversy using war-like metaphors such as battles, fights and victories. Others were: confidence game or shell game, etc. (11 percent), personification of data (10 percent) and magic, metamorphosis or change metaphors (10 percent). Metaphors about raping the earth comprised 9 percent of all metaphors, while metaphors about stealth or thieving made up 8 percent of all metaphors.

Sources

We also explored which sources were invited to speak about the mine siting issue. As expected, government and judicial sources were used principally. Of all the sources in our sample, those quoted the most frequently included members of the state government and DNR, the federal government, the courts, and elected officials (34 percent), while sources from county and city government were used in 12 percent of the articles. In all, government representatives were sources in 46 percent of the articles.

Groups opposed to the mine, including fishing, wildlife and nature organizations, the Sierra Club, anti-mine groups and Native Americans, were used as sources in nearly one-quarter of the articles (25 percent). Pro-mining groups and mining companies were used as sources in 14 percent of the articles. Undefined or unidentified groups comprised 17 percent of the total sources.

-- Table 1 about here --

Conflict and Pluralism

Our initial sense was that high pluralism would be associated with story frames that embrace conflict, and that oppositional sources would be more likely to be heard in these newspapers. We also reasoned the frames dealing with economics and boosterism would be more likely to be associated with low pluralism, and that official, government sources would be associated with these newspapers (please refer to Table 2).

Using correlations, we found that conflict frames were not related at significant levels with pluralism, contrary to Hypothesis 1. Community frames, which we reasoned would be associated with boosterism, and hence, low pluralism, were indeed associated with low pluralism, in partial support of Hypothesis 2. However, economics frames did not vary according to level of pluralism, which does not support Hypothesis 2.

We also found that ethics frames were positively associated with high pluralism, and that science frames were related to low pluralism.

Sources. We had reasoned that newspapers from more pluralistic communities would use sources considered outside the mainstream, and the correlations bore this out. Anti-mine sources

(fishing, wildlife and nature organizations, the Sierra Club, anti-mine groups and Native Americans) were associated with high pluralism, in support of Hypothesis 4. None of the other source groups were associated with pluralism at significant levels.

-- Table 2 about here --

Predictive Power

We asked ourselves whether pluralism would predict to certain story frames, and to test this, ran hierarchical multiple regressions with the six story frames (Conflict, Environment, Science, Ethics, Economic and Community frame) as dependent variables. Separate regressions were run for each frame. The following blocks were entered: total words and paragraphs, as a control block; sources; pluralism; and the remaining story frames.

Overall, pluralism did not predict story framing of conflict, community affairs, or ethics frames. Pluralism did, however, explain a portion of the variance on two frames: science-technology and economics. (Please see Table 3).

Science-technology Frame. Pluralism contributed to the variance on this frame (weighted beta= -.15), as did conflict frame (beta= -.18) and environment frame (beta=.50). This finding indicates that newspapers from less pluralistic communities are

more likely to engage in science-related frames.

Economic Frame. Total words (beta= -.22) and paragraphs (beta=.33) explained a portion of the variance on this frame, as did pluralism (beta=.14). Conflict frame (beta= -.26) and community frame (beta=.53) also accounted for part of the variance. Economic frames seem more likely to be used by newspapers with greater pluralism, contrary to Hypothesis 2.

Conflict Frame. Total paragraphs explained part of the variance on conflict (beta=.34), and using anti-mine sources (beta=.28) and county sources (beta=.21) each contributed a portion of the variance. Science (beta= -.19), economics (beta=.32) and community (.16) frames were also associated with conflict frames. This finding suggests that as newspapers use conflict frames, they are also more likely to use sources who are opposed to the mine, as well as city and county sources.

Environment Frame. The number of paragraphs contributed to the variance on this frame (beta=.25) as did the use of official, government sources (beta=.22) and county and city sources (beta= -.16). Science frames also contributed to the variance (beta=.42). This suggests that using frames that encompass science and technology is also related to high use of sources from the DNR, federal government, the courts and elected officials. Note, however, that county and city sources are less likely to be used in constructing environmental frames.

Ethics Frame. total paragraphs explained part of the variance on this frame (beta=.25), and anti-mine sources (beta=.26) also contributed to ethics frames. It seems that when ethics and morality issues are used to construct news stories, sources opposed to the mine are more likely to be used.

-- Table 3 about here --

We were also interested in whether pluralism predicted to use of specific sources, and ran hierarchical regressions with sources as dependent variables: DNR and government sources; city and county sources; anti-mine sources; and pro-mine sources. Pluralism (beta = .18) did predict the use of anti-mine sources, in support of Hypothesis 4. Pluralism, however, did not predict the use other source groups.

Discussion

Our study has taken the tenets of the pluralistic paradigm of macrolevel effects on news production and examined them through a different lens: story framing. And by exploring framing against the backdrop of a science and risk issue, we have added another dimension to understanding community structure and its relationship with news.

The role of the small-town, community press--that of fostering social cohesion and promoting community harmony--is only partly borne out in this study. Story frames that we specifically operationalized as "conflict" are not associated with pluralism at statistically significant levels. However, other types of frames--frames that partly reflect controversy--are related to pluralism. We found that newspapers from low pluralistic communities are more likely to use story frames that focus on community affairs and impact. Also, newspapers from less heterogeneous communities are more likely than other newspapers to frame stories along science and technology frames. Finally, these newspapers seem to avoid framing issues along ethics or economics frames.

We interpret these findings to mean that newspapers from communities that are less pluralistic avoid controversy. For example, newspapers from more homogeneous communities focus on science and technology. Generally speaking, the stories that embrace this frame explain and interpret the copper mine using scientific and technical information from scientific and technical sources. This frame is conceptually different from the frame that embraces ethics and morality. Indeed, ethical discussions are associated with anti-mine sources, who, in turn, are characterized by mining proponents as irrational, hysterical or uninformed. The vice president of the Flambeau mining company

described protesters as:

> "...a handful of malicious, uninformed people...[who] decide to resort to a last-ditch campaign of threats and intimidation." ... "It's a question of whether or not a handful of people can frustrate the will of the majority, and equally important, it's a question of whether public policy and environmental regulations are going to be based on science and technology, or on misinformation, threats and intimidation."[3]

On the other hand, protesters envelope their arguments with ethical, spiritual and ecological arguments:

> ... Lac Courte Oreilles spiritual leader Eugene Begay ... said the Ojibwa are especially concerned about wildlife and the endangered clams in the Flambeau River. He said the clams are sacred to this area and the environment. [4]

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[3] "Mining official says project won't cave in to protesters," Pamela Powers, Wausau Daily Herald, July 11, 1991, page B1.

[4] "Mine demonstrations: will they continue?" Ladysmith News, July 11, 1991, p. 1.

Our study suggests that pluralistic communities are more likely to cover stories along ethical lines, and are more likely to use sources opposed to the mine, which, taken altogether, makes for controversial news copy.

That such issues and voices may not receive equal time in more homogenous communities suggests that in their efforts to avoid conflict, the small-town press' vision is blurred. As a result, the news product appears to be constricted, resulting in a narrower range of views, opinions and story themes.

Our expectation that less pluralistic newspapers would also engage in economic boosterism was not fulfilled. Indeed, stories that were generated along economic frames were more likely to arise from communities with high pluralism. This suggests to us that economic coverage may not vary according to the level of community pluralism.

Theorists have suggested that the role of the newspaper in homogeneous communities promotes social cohesion, while large, daily newspapers may function as an arena for debate. We argue that as communities become more pluralistic and diverse--as they move along a continuum from homogeneity toward heterogeneity--they are more likely to support a diversity of social power and entertain a greater range of controversial views. An attribute of diversity and tolerance of differing viewpoints seems to be the

news product set within the context of a community controversy. In some ways, controversial issues may present an acid test for looking at how news frames differ according to community pluralism. ♦

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Table 1

Percentage of theme, pegs, metaphors & sources in News Stories

Story Themes	
Mine development	27%
Conflict	23%
Legal	19%
Environment-wildlife	14%
Political	5%
Economics	3%
Community	3%
Ethics	3%
Science	2%
Native American	0

News Pegs	
Mine	27%
Conflict	23%
Legal	19%
Environment-wildlife	14%
Political	6%
Economics	3%
Science	3%
Community	2%
Ethics	2%
Native American	1%

Metaphors	
War	24%
Confidence game	11%
Magic, illusion	10%
Data personified	10%
Rape	9%
Theft, stealing	8%
Role, stage	7%
Economic Boost	6%
Mine as machine	6%
Progress	3%
Mother as earth	2%
Partnership	2%
Generations	1%
Trust	1%

Sources	
DNR, courts, federal gov't, elected officials	34%
County & city sources	12%
Anti-mine sources	25%
Pro-Mine sources	14%
Undefined, unidentified	17%

NOTE: N = 181

Totals may not add to 100% due to rounding error

Table 2

Correlations of Story Frames with Community Pluralism

	CONFLICT FRAME	COMMUNITY FRAME	ECONOMICS FRAME	ETHICS FRAME	MINING FRAME	SCIENCE FRAME	ENVIRONMENT FRAME
PLURALISM	.1040	-.1320*	.0472	.1218*	.0560	-.1766**	-.0119

Correlations of Pluralism with News Sources

	DNR & GOV'T	COUNTY & CITY	PRO-MINE	ANTI-MINE	OTHERS
PLURALISM	.0628	-.0565	.0911	.2197***	-.1536*

Correlations of Frames with News Sources

	DNR & GOV'T	COUNTY & CITY	PRO-MINE	ANTI-MINE	OTHERS
MINING FRAME	.2092**	-.1599*	.2003**	.0240	.0869
ECONOMY FRAME	-.0614	.1128	-.0089	-.0777	.3695***
CONFLICT FRAME	-.2068**	.2664***	.1136	.3408***	.1347*
ENVIRONMENT FRAME	.4195***	-.2789***	.2221***	.1571**	-.0876
SCIENCE FRAME	.2701***	-.0761	.1337*	.0019	-.0435
ETHICS FRAME	.0109	-.0504	.1020	.2947***	-.0350
COMMUNITY FRAME	-.2675***	.1222*	-.1591*	-.1325*	.3895***

NOTE: N = 181

*** $p \leq .001$
** $p \leq .01$
* $p \leq .05$

Table 3

Dependent Variable: Ethics Frame[1]

Independent Variables	Weighted Beta	R^2
Story Size		
word total	-.13	
paragraph total	.26*	.03
Sources		
DNR, courts, etc.	-.07	
Anti-mine	.26**	
Pro-mine	-.04	
County, city	-.03	
Others, undefined	-.07	.11
Pluralism	.05	.12
Frames		
Mine development	-.03	
Science-technology	-.05	
Economics, jobs	.00	
Conflict	-.04	
Community	-.09	
Environment	.06	.13

Dependent Variable: Science Frame[2]

Independent Variables	Weighted Beta	R^2
Story size		
word total	.03	
paragraph total	.00	.02
Sources		
DNR, courts, etc.	.05	
Anti-mine	.00	
Pro-mine	.06	
County, city	.12	
Others, undefined	.03	.12
Pluralism	-.15*	.15
Frames		
Ethics	-.04	
Mine development	-.02	
Economics, jobs	-.04	
Conflict	-.18*	
Community	-.08	
Environment	.49***	.37

Dependent Variable: Economics Frame[3]

Independent Variables	Weighted Beta	R^2
Story size		
word total	-.22**	
paragraph total	.33***	.07
Sources		
DNR, courts, etc.	.09	
Anti-mine	.00	
Pro-mine	.08	
County, city	.10	
Others, undefined	.12	.17
Pluralism	.14*	.19
Frames		
Ethics	.00	
Mine development	.08	
Science-technology	-.03	
Community	.54***	
Conflict	-.26***	
Environment	-.10	.47

Dependent Variable: Environment Frame[4]

Independent Variables	Weighted Beta	R^2
Story size		
word total	.00	
paragraph total	.25**	.06
Sources		
DNR, courts, etc.	.22***	
Anti-mine	.06	
Pro-mine	.10	
County, city	-.15*	
Others, undefined	-.08	.32
Pluralism	.05	.32
Frames		
Ethics	.03	
Mine development	.05	
Science-technology	-.05	
Economics, jobs	-.09	
Conflict	-.06*	
Community	-.03	.49

(Table 3 Continued)

Dependent Variable: Mine Frame[5]			Dependent Variable: Conflict Frame[6]		
Independent Variables	**Weighted Beta**	**R^2**	**Independent Variables**	**Weighted Beta**	**R^2**
Story size			*Story size*		
word total	.06		word total	-.13	
paragraph total	-.06	.02	paragraph total	.34**	.05
Sources			*Sources*		
DNR, courts, etc.	.16		DNR, courts, etc.	-.06	
Anti-mine	-.04		Anti-mine	.28***	
Pro-mine	.22**		Pro-mine	.07	
County, city	-.09		County, city	.21**	
Others, undefined	.16	.13	Others, undefined	.02	.24
Pluralism	.05	.13	*Pluralism*	.08	.24
Frames			*Frames*		
Ethics	-.03		Ethics	-.03	
Economics, jobs	-.02		Science	-.19*	
Conflict	.12		Economics, jobs	-.32***	
Community	-.07		Community	-.17	
Environment	.08	.15	Environment	-.08	.36

NOTE: N = 180

Significance of T:
*** $p \leq .001$
** $p \leq .01$
* $p \leq .05$

1. Ethics and Morality frame is comprised of ethics news peg, paragraphs, headline, theme and the trust metaphor.

2. Science and Technology frame is comprised of science news peg, paragraphs, theme and headline.

3. Economics frame is comprised of economics and jobs news peg, paragraphs, headline, theme and economics boost metaphor.

4. Environment-Wildlife frame is comprised of news peg, paragraphs, theme and headline.

5. Mine development frame is comprised of mine theme, paragraphs, headline and news peg.

6. Community frame is comprised of community headline, paragraphs, theme and peg.

Pluralism Index[a]

Community	Size	Min[b] Income	Media Outlet	Church	School[c]	Servic[d]	PC$[e]	TOTAL	Final Scale
Chippewa	7	7.5	5.5	8	2	7	8	45	6
Eau Claire	10	3	9	10	8	10	10	60	10
Hayward	3	4	3	6	11	5	5	37	5
Ladysmith	5	5	5.5	3	6	6	2	32.5	4
Madison	11	6	12	11	10	11	12	73	11
Milwaukee	12	11	11	12	12	12	9	79	12
Odanah	1	--	1.5	--	--	1.5	1	5	1
Phillips	2	2.5	1.5	2	4.5	3	3	23.5	2
Rice Lake	6	12	7	7	4.5	4	6	46.5	7
Spooner	4	10	4	4	3	1.5	4	30.5	3
Superior	8	9	8	5	7	8	7	50	8
Wausau	9	2	10	9	9	9	11	59	9

[a] For each category, communities were ranked from 1 to 12, lowest to highest indicator of pluralism.

[b] Proportion of minority income to nonminority (white) income--higher rate indicates less proportional difference.

[c] Proportion of minority school children to white, grades Kindergarten through 12.

[d] Count of all volunteer service organizations within the city.

[e] Per capita income

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THE EFFECTIVENESS OF "HOW" GRAPHICS AND TEXT IN CONVEYING BASIC NEWS STORY INFORMATION

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Abstract

THE EFFECTIVENESS OF "HOW" GRAPHICS AND TEXT IN CONVEYING BASIC NEWS STORY INFORMATION

The effectiveness of an information or "how" graphic -- a grapic representation of a complex news event -- and text equivalent in conveying factual information about a complex news event was tested using a simple 2x2 posttest-only experiment with a story from *USA Today*. Results demonstrated near-identical significant reader knowledge of the event from either technique of info graphic and traditional text. The redundant combination of incorporating information into both forms produced a significant increase in knowledge beyond the additive effect of combining the two. The results are interpreted as support for the emerging journalistic technique -- particularly common since the Gulf War -- of using both text and graphics as complementary methods of reporting complex events.

Abstract

THE EFFECTIVENESS OF "HOW" GRAPHICS AND TEXT IN CONVEYING BASIC NEWS STORY INFORMATION

The effectiveness of an information or "how" graphic -- a grapic representation of a complex news event -- and text equivalent in conveying factual information about a complex news event was tested using a simple 2x2 posttest-only experiment with students as subjects. The stimulus was a *USA Today* story and info graphic used in coverage of the attack on commuters at the entrance to CIA headquarters in January, 1993, in which two people were killed and three injured. The original materials were manipulated to accommodate the four conditions of the experiment.

Results demonstrated near-identical significant increases in reader knowledge of the event from either technique of info graphic and traditional text. Subjects who received the info graphic averaged 6.0 on an eight-item test of information in the story, while those who did not averaged 4.1. Subjects who received the same information in text form averaged 6.2, while those who did not scored a mean of 3.8. The redundant combination of incorporating information into both forms produced a significant increase in knowledge beyond the additive effect of combining the two. The control group, which did not receive the information in either form, had an average of 2.3 on the dependent variable test, while those who received it in both the text and graphic averaged 6.9. Measures of media use and self-assessments of interest in and knowledge of public affairs were entered into an ANOVA but were non-significant. The full model produced an R^2 of .48.

The results are interpreted as support for the emerging journalistic technique -- particularly common since the Gulf War -- of using both text and graphics as complementary methods of reporting complex events.

THE EFFECTIVENESS OF "HOW" GRAPHICS AND TEXT IN CONVEYING BASIC NEWS STORY INFORMATION

INTRODUCTION

Print media in the decade of the 1980s were characterized by increasing use of graphics that editors turned to not only as a design element but also as a way to convey information. With trend-setter *USA Today* in the vanguard, American newspapers and newsmagazines turned to both plain and dressed-up locator maps, bar charts, pie charts, line graphs and pseudo graphs[1] with increasing frequency in the 1980s and early 1990s. More complex graphics, such as the appropriately nicknamed "how" graphics that chronicle the unfolding of a news event or explain how something complicated occurs, were utilized rarely in the initial wave of the graphics revolution, but in the second wave -- demarcated by the Persian Gulf War, a watershed event in the use of graphics[2] -- the sporadically used how graphic became commonplace. The

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[1]This word was used by Tankard to describe illustrations that look like graphs but are really just tables superimposed over drawings. See James W. Tankard Jr., "Quantitative Graphics in Newspapers," *Journalism Quarterly* (Summer-Autumn, 1987), pp. 406-415.

[2]Mark Fitzgerald, "Graphics on the Gulf," *Editor & Publisher,* (March 9, 1991), pp. 12-13.

assumption has been that readers can better understand a complex news event or process when it is visually presented, along the lines of a picture being worth a thousand words. How graphics "often provide the visual what, where, when, why and how of events and are among the most striking and popular of graphics," wrote the authors of a popular visual design textbook.[3] Mario Garcia of the Poynter Institute for Media Studies recently remarked that information graphics have become so entrenched as a part of the information arsenal that editors take them for granted:

> Today it is difficult to imagine how one could have grasped such news events as the invasion of Grenada, the shooting down of Korean Air Lines Flight 007 in the Sea of Japan, the Falkland Islands War, or even the details of the latest Shuttle mission, airplane hijacking, or terrorist bombing without the use of informational graphics.[4]

Communication research has lagged behind the changes in story presentation. This experimental study will consider whether how graphics effectively complement or supplant story text in conveying basic information to the reader.

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[3]Howard I. Finberg and Bruce D. Itule, *Visual Editing* (Belmont, Calif.: Wadsworth Publishing Co., 1990), p. 149.

[4]Mario Garcia, *Contemporary Newspaper Design* (Englewood Cliffs, N.J.: Prentice-Hall) 1993], p.278.

PREVIOUS RESEARCH

Social scientists in recent years have begun to tackle the question of whether media graphics effectively convey information. So far, research into graphic effectiveness has been fragmentary, and pieces of the research puzzle do not all fit neatly together.

Early on, attention was focused on whether media graphics convey information accurately, something that researchers had questioned because media graphics are often highly adorned and sometimes violate graphic convention and principles of information processing. Experiments by Kelly[5] and Tankard[6] raise questions about the validity of Tufte's principle of the data-ink ratio, which holds effective graphics need to have a high ratio of ink used to present data compared to total ink used to print the graphic. Media graphics often have a large share of non-data ink -- ink being used to enhance the look of the graphic, not strictly to present information.

Kelly found, in nine of 10 cases, no significant difference in subject accuracy on questions about graphics between the

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[5]James D. Kelly, "The Data-Ink Ratio and Accuracy of Newspaper Graphs," *Journalism Quarterly*, (Autumn 1989), pp. 632-639.

[6]James W. Tankard Jr., "Effects of Chartoons & Three-Dimensional Graphs on Interest and Information Gain," *Newspaper Research Journal*, (Spring, 1989), pp. 91-102.

experimental group whose graphics had high non-data-ink ratios and the group that had informationally identical graphics that had been manipulated to erase much of the non-data ink. Kelly concluded that a high data-ink ratio is not a sufficient condition by itself to consistently diminish accuracy of data recall.

The results of Tankard's experiment are consistent with Kelly's. Tankard compared the effects of chartoons, which combine pictorial elements with a graph presenting data, and three-dimensional graphs with plain graphs. No significant differences in information gain were found between subjects receiving the plain and chartoon versions of three graphics or between subjects receiving plain and three-dimensional versions of three other graphics. Tankard reconciled this finding with his prediction of less information gain for chartoons and three-dimensional graphs, based in part of Tufte's data-ink ratio, by speculating that the amount of non-data ink in a graphic may make little difference to the average newspaper reader.

Editors are concerned not only about the accuracy of graphics but also their visual appeal. The Tankard experiment also showed that subjects rated each of the chartoon versions as having significantly higher appeal than the plain versions and two of the three three-dimensional graphs as having significantly higher appeal.

David[7] also considered whether quantitative media graphics

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[7]Prabu David, "Accuracy of Visual Perception of Quantitative

accurately convey information. His within-subjects experiment utilized eight pairs of graphics -- test graphics that violated theoretical principles of accuracy of perception and control graphics that were simple line-drawings free from decoration or distortion and presented the same information. For five of the eight pairs, the error associated with the test graphic was significantly greater than the error associated with the control graphic. David concluded that some mass-media graphics do distort data. For example, all three graphics representing the lie factor -- where the ratio between different data points and the ratio between the corresponding graphical elements do not match -- were significantly less accurate than the control. David also conjectured that some violations of graph-making principles may not hurt accuracy -- only one of three graphics violating the exponent law was significantly less accurate than the control. The exponent law -- the perceived magnitude of the stimulus is a power function of the physical magnitude of the stimulus -- is violated by graphics whose complex shapes deprive viewers of one-dimensional cues such as angle or arc length.

The Kelly, Tankard and David studies all focused on stand-alone graphics. One of the first studies to consider the role of information graphics accompanying a story was by Pasternack and

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Graphics: An Exploratory Study," *Journalism Quarterly*, (Summer 1992), pp. 273-292.

Utt[8], who found that readers may turn to infographics more for content than because of appearance and advised emphasizing the "info" in infographics. The experimental study of infographics used in a story package also found that the size of the graphic determines whether the reader will turn to the graphic before or after the story. Most subjects whose graphic was a dominant element in the package -- a chartoon incorporating two bar graphs and a pie chart and containing its own headline -- turned to the graphic first. Most subjects whose package contained a small unadorned ledger chart read the story first. Given that some people prepare for the story by digesting the infographic first and others read the story first and turn to the infographic as supplementary material, Pasternack and Utt recommended that the content of the article not be repeated in the graphic, which should provide details that, in lieu of a graphic, would appear in the latter part of the story.

However, a series of experiments by Griffin and Stevenson indicate that readers are better informed when a graphic provides information that is also available in the text. The first experiment, which looked at the usefulness of accompanying a foreign news story with a background-box graphic containing such items as a locator map and written information about the country's history, geography, government, people, etc., found

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[8]Steve Pasternack and Sandra H. Utt, "Reader Use & Understanding of Newspaper Infographics," *Newspaper Research Journal*, (Spring 1990), pp. 28-41.

that subjects who received the background information in both the story and in an accompanying graphic fared better on a questionnaire focusing on contextual background information than did those who had the background in the text but had no graphic or those who had the background in the graphic, but whose stories lacked the background information.[9] In another experiment,[10] those researchers found that reader knowledge of the geographical setting of a foreign news story could be improved by including a locator map with the story. Subjects who received geographical information in the story as well as via a locator map performed better on a questionnaire about the story's geographical setting than did subjects who received the geographical information only in the text or who received it only via a locator map and not in the text. A third experiment by Griffin and Stevenson found that readers retain more statistical information from a story when the information is also provided in an information graphic than when the statistical information is provided in the graphic but is

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[9]Jeffrey L. Griffin and Robert L. Stevenson, "Influence of Text & Graphics in Increasing Understanding of Foreign News Context," *Newspaper Research Journal*, (Winter/Spring 1992), pp. 84-99.

[10]Robert L. Stevenson and Jeffrey L. Griffin, "The Effectiveness of Locator Maps in Increasing Reader Understanding of the Geography of Foreign News," paper presented to the International Communication Association, meeting in Miami, May 1992.

omitted in the story or when it is provided in the story but the graphic is omitted.[11] In all three experiments, the redundant technique of providing the information in both places led to the greatest knowledge gain among readers.

Further experimental support for the idea that information graphics effectively help to tell a story came from Stark and Hollander,[12] who concluded that a how graphic enhances readers' accurate recall of the facts of a news story. In their experimental study, subjects received one of four versions of a simulated front page whose lead story about a plane crash was either offered without visuals, with a how graphic, with an aftermath photo, or with both the how graphic and photo. The graphic did not contain information that was unavailable in the text. Responses to a questionnaire about the crash showed that subjects with more visuals were able to answer more questions and to answer more accurately. Ability to answer and accuracy were highest for the group with the story plus how graphic plus photo, followed by the group with the story plus how graphic, the group

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[11]Jeffrey L. Griffin and Robert L. Stevenson, "The Influence of Statistical Graphics on Newspaper Reader Knowledge Gain," paper presented to the Association for Education in Journalism and Mass Communication, meeting in Montreal, August 1992.

[12]Pegie M. Stark and Barry A. Hollander, "Information Graphics: Do They Help Readers Understand News Events," paper presented to the Association for Education in Journalism and Mass Communication, meeting in Minneapolis, August 1990.

with story plus photo, and the group with story only.

Another experiment, by Ramaprasad[13], found that subjects whose story was accompanied by two information graphics scored significantly higher on direct measures of recall than did subjects with the story alone for questions with salient visual support. However, a comparison of means for all recall questions -- not only those with salient visual support but also those with no visual support -- found no significant differences between the group with the story alone and the group with the information graphics. Ramaprasad's experiment also considered other cognitive effects of information graphics by comparing subjects' self-assessments on statements regarding attention, information retrieval, understanding and recall. There were no significant differences between subjects whose story was accompanied by the two graphics and those whose story was alone on self-assessments of the story's ability to attract attention and keep it.

Surprisingly, subjects who had the story alone rated the ability of information graphics to get attention and lead them to the story significantly higher than did the group that received the story plus graphics. This control group also rated significantly higher the usefulness of infographics in helping understand the story and recall elements of the story than did the experimental group that actually had information graphics.

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[13]Jyotika Ramaprasad, "Informational Graphics in Newspapers: Attention, information, retrieval, understanding & recall," *Newspaper Research Journal*, (Summer 1991), pp. 92-103.

The author speculated that the significantly higher ratings that the control group gave to the potential of infographics than the experimental group gave to the actual infographics to which they were exposed might be accounted for by the visual literacy of readers, the difficulty of the topic and the quality of the writing and the graphics. There was no significant difference between the two groups on self-assessments of understanding of the story or their ability to recall information from the story. One problem with the study -- noted by the author -- was that the black and white reproduction of the two graphics used in the experiment reflected considerable lost information from the color originals. This admission makes even more noteworthy the finding that direct measures of subject recall found that the experimental group had significantly higher scores on questions with visual support in the graphics than did the control group.

Ward[14] found no evidence that sidebar graphics more effectively convey numerical information or aid in comprehension of a main story than a sidebar story would. Subjects received one of five versions of a story package -- the story alone, the story accompanied by a bar graph, the story accompanied by the same bar graph with adornment, the story and a table, and the

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[14]Douglas B. Ward, "The Effectiveness of Sidebar Graphics," *Journalism Quarterly*, (Summer 1992), pp. 318-328. Also see the more-detailed paper of the same title that Ward presented to the Association for Education in Journalism and Mass Communication, meeting in Boston, Mass., August 1991.

story accompanied by a sidebar story verbally presenting the information presented in the graph or table in other versions. Analyzing subject responses to a questionnaire on information found in the story and/or in the various graphics or sidebar, Ward found no significant differences between accuracy scores of subjects whose story was accompanied by sidebar bar graphs and those with a sidebar story. He further found that subjects whose stimulus contained the sidebar story scored significantly higher on a measure of aiding comprehension of the main story than those with the table or the unadorned bar chart, but no significant differences were found between the group with the sidebar story and the group with the adorned bar chart. Ward also found no evidence that a bar graph accompanying a news story is more effective than a table in providing numerical information and in aiding comprehension of a main story. A subject rating of the understandability of the various versions found no significant differences. A lack of methodological rigor in this study -- there were problems with the measuring instrument -- may explain why Ward's findings about graphic effectiveness do not converge with the findings of the Stark and Hollander and Griffin and Stevenson studies, which provide clear evidence that information graphics can effectively complement stories and enhance reader recall or understanding of the stories' facts.

The Stark and Hollander study was unique in that it focused on how graphics. How graphics can be further categorized as diagrams or schematics, which explain how something works or why or how an event occurred, and facts boxes, which relay important

points of a story or event.[15] While research into the use and effectiveness of media graphics in general has been scant, how graphics have been virtually ignored -- most likely because they were little used until recently. Smith and Hajash,[16] who analyzed information graphic use by 30 U.S. dailies in 1986, found that how graphics comprised just 3.3 percent of the total. That study found more common usage of maps (46%), bar charts (17%), line charts (11%) and lists (11%). Smith and Hajash speculated that graphics were uncommon, despite clear usefulness, because they are more difficult to produce than other types of information graphics. The rising use of how graphics is attributable in part to technological advances that have simplified the creation and distribution of graphics and in part to newspaper graphic designers whose sophistication is rising and editors who place higher value on visual design. These considerations aside, however, the proliferation of how graphics also reflects an assumption that they are effective.

RESEARCH QUESTION

The research question addressed by this study is whether reader recall of the facts of a news event can be enhanced by providing certain information via a graphic, as opposed to

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[15]Finberg and Itule, *op. cit.*

[16]Edward J. Smith and Donna J. Hajash, "Informational Graphics in 30 Daily Newspapers," *Journalism Quarterly*, (Fall 1988,) pp. 714-718.

presenting information via story text only. Can a graphic effectively complement or even supplant story text in relaying aspects of a news event to newspaper readers?

METHOD

To test the influence of two techniques of presenting information about a news event, a simple 2x2, randomized-group, posttest-only experiment was designed. The two factors were "text," referring to whether certain specific information about the event was woven into the story, and "graphic," referring to whether the story was accompanied by a facts-box how graphic. For both factors, the values were "present" and "absent." They were crossed to produce four conditions: text and graphic, text only, graphic only, and neither.

The dependent variable was subject response to eight multiple-choice questions about a shooting spree by a gunman outside CIA headquarters in suburban Washington. Examples include:

> Where were the cars that the gunman fired upon? (a) in two lanes of traffic waiting to turn left into the CIA main gate; (b) one block directly in front of CIA headquarters, waiting in a lane of traffic that feeds straight into the CIA main gate; (c) two blocks directly in front of CIA headquarters, waiting in a lane of traffic that feeds straight into the CIA main gate; or (d) lined up at the guardhouse for the CIA main gate, waiting for clearance to enter.

> What did the gunman do after firing on the first

two cars? (a) fired at one more car, then ran to his own car and drove away; (b) jumped atop one of those cars and began firing at passengers in a commuter bus; (c) unleashed a hail of gunfire in a 180-degree path to the front and sides of him, jerked open the door of one of the cars, pulled out the driver and got in that car and sped away; or (d) continued on foot between the two lanes of stopped cars, firing shots that killed two and wounded one.

Correct answers were summed to produce a single scale with a range of 0 to 8. Self-assessments of interest in public affairs and knowledge of public affairs were included for use as covariates. Response choices were "very," "fairly," "not very," and "not at all" interested/informed. Also for use as covariates, measures of recent newspaper, network television and newsmagazine use were included, with response being the number of days in the previous week the subject read a daily paper and watched the evening network news and number of weeks in the previous four that he or she read a newsmagazine.

The stimulus was a Jan. 26, 1993, news story from *USA Today* that described the shooting rampage by a lone gunman who killed two and wounded three in an attack on rush-hour commuters near the entrance to CIA headquarters. The 21-paragraph story ran about 15 column inches across five columns in a seven-column format on page 3A. The story package also contained a how graphic, 7.25" x 7.25", that provided a step-by-step chronology of the event. Besides a 1-2-3-4 of how the event unfolded, the graphic, which had its own headline, contained a two-sentence

summary of the event, a paragraph about the CIA compound, a locator map and a small photo. The story package also included a 10-paragraph sidebar story about the impact of the shooting on the neighborhood. The sidebar story was not used in any of the experimental conditions.

In the experiment two manipulated versions of the story were either paired with the original graphic or run alone. In one version, answers to the eight questions on the CIA shooting that were posed in the quiz sheet were woven into the story. The other story version lacked the specific information that was sought by the quiz sheet questions. The other condition was presence or absence of the accompanying how graphic. All eight questions about the shooting could be answered from information conveyed by the graphic. The four versions of the stimulus were assembled using desktop publishing software to imitate, as closely as possible, the *USA Today* style. Each ran with the same headline and subhead [different in wording, but not tone, from the original because of layout considerations] and used the original byline. The stimulus looked very much like a photocopy of a clipping from *USA Today*. For the same reason, the graphic was lifted straight from the newspaper, but the verbal summary was deleted as a control measure. An example of the stimulus material is provided in an appendix.

Subjects were 209 communication/journalism undergraduates at a large southern state university and a midsize midwestern private university. They were given copies of the stimulus with the quiz sheet folded and told to read it, taking as much time as

they wanted, then to put the story out of sight before opening the quiz sheet. They were told the quiz sheet contained questions about the story, but nothing beyond that.

RESULTS

Table 1 shows the mean knowledge scores for each of the four combinations of text and graphic as well as scores for each of the two factors and the overall mean. Differences are dramatic but consistent with expectations and with previous research. Subjects who didn't receive information contained in the questions -- essentially a control group for both factors -- did very poorly. Their knowledge could have come from their independent knowledge of the incident, good guessing, or random answers to the multiple-choice questions. Providing information either within the text itself or in the infographic raised the scores dramatically, although the text version produced a larger difference than the infographic version. The combination of both text and graphic produced a jolt of effect that increased the mean from slightly more than two correct answers out of eight to nearly seven.

Tables 1 and 2 about here

However, one difference between the results here and the previous experiments that used the same design is worth noting. In the experiments testing text vs. statistical graphs, maps and background data boxes, the text format produced a modestly

greater effect than the visual factor while the combination of the two was additive. That is, while the redundant condition combining both text and graphic produced higher knowledge than either condition by itself, the interaction was not statistically significant. Here, in addition to a modest difference between the text and infographic versions, the combined effect is multiplicative rather than additive. The interaction between the two appears to be significant.

To assess the influence of the experimental manipulation and the non-experimental factors of media use and involvement with the larger environment of international affairs, results were subjected to analysis of variance (ANOVA) with text and graphic as factors (independent variables) and the knowledge measure as the dependent variable. The three media use measures and self-assessments of interest in and knowledge of international affairs were treated as covariates assessed simultaneously with the main factors and are considered control variables more than additional independent variables.

Results are shown in Table 2. In addition to the usual summary table, the table shows the simple correlation between the dependent variable (knowledge scores) and each of the elements of the model and a partial correlation between the dependent variable and all other elements, which controls for all other vaariables. The table allows us to examine, in order, the contribution of each element by itself to an explanation of the variance of the knowledge test, the unique contribution of each element after controlling for all other sources of variance, and,

finally, the success of the model as a whole.

The ANOVA table confirms the casual inspection of the results and adds insight into the more complex relationship between the dependent variable and covariates. Although interest in international affairs comes close ($p=.059$), none of the measures of real-world media use and self-assessments of foreign affairs knowledge or interest has any significant influence on the dependent variable. In fact, most of the F-ratios of the variance explained by each covariate to the unexplained variance fall below the equality expected by chance ($F=1$).

Two differences between the results here and the other experiments constructed along the same model are worth noting. The first, mentioned above, the multiplicative rather than additive effect of combining the text and infographic versions. In the earlier experiments, the ANOVA interaction term was non-significant. Here it is significant -- the combination of text and info graphic produces a gain in knowledge beyond that attributable to the sum of the two.

The second difference is the lack of relationship between the knowledge scores and either the measures of real-world media use or subjects' self-assesssment of interest in and knowledge of international affairs. While the topic of the experimental stimulus here is not strictly international as it was in the other experiments, a story about a major government agency with international activities and possible foreign involvement is in the same genre of content. Surprisingly enough, none of the covariates had any influence on the knowledge scores.

Not too much should be made of differences among experiments involving non-representative subjects and single stimuli. External validity or generalizability of classroom experiments is always weak. In this case, we don't know what differences would result if a more representative population were tested, or if different stories were used as stimuli, or if the setting were more life-like.

In general, however, the results here are compatible with most of the others collected in a wide range of studies. Readers do learn from visual presentation of material, although it is not so clear whether they learn more than from the old-fashioned technique of telling the story in an inverted-pyramid style. It is equally unclear whether any one of the range of visual techniques available to the modern editor is more effective than any other. What advice is there here for the professional sitting at the computer with a palette of visual techniqes available?

DISCUSSION

Editors design pages with a variety of purposes in mind. They want to produce aesthetically appealing material that will win praise from professional colleagues. At some level, they want to contribute to a well-informed citizenry that is necessary for democracy. At this point for most American daily newspapers, the immediate goal is sales, a reasonable objective when circulation across the nation continues to slide. The dramatic changes in the appearance of most newspapers in the United States

in recent years is a product of these concerns, as well as the influence of *USA Today*, whose innovations in content and appearance have been copied in varying degrees by most dailies. Magazines, of course, are in a similar struggle for readers' attention and dollars. A comparison of the average newspaper or magazine page today with its equivalent of only a few years ago demonstrates how quickly the graphic revolution has changed the appearance of print journalism. But to what effect?

The total influence of use of graphics is well beyond the scope of this experiment. An attractive layout, with more white space and clever use of various kinds of graphics, may attract readers who otherwise would ignore the paper entirely. It may draw casual readers to stories they would otherwise skip or encourage them to spend more time with the story. The combination of text and graphic might even draw different readers who are oriented to left- or right-hemispheric brain functions. At a more practical level, readers might find the traditional word picture and graphic representation useful complements. This function seems especially useful to the information graphic approach tested here and may account for the additional increase in knowledge that was associated with exposure to the information in both forms.

The results of the experiment -- obviously limited when based on a small sample of students subjected to a single stimulus -- support the effort to make newspapers more attractive and acknowledge the growing importance of visual presentation. Perhaps even more than simple maps and graphics, the infographic

recreates a complex event in the mind's eye. This is especially important in a visual age in which traditional reading skills and interests are declining and in which, for better or worse, the world seems to be moving toward a visual information environment. The slow revolution is potentially as important as the shift from oral to written culture centuries ago.

However, words are still important. Consider the effect of the traditional technique of writing about the event, which was identical to the effect of the graphic. Writing about an event is somewhat more effective in helping readers understand it than showing it in a graphic. Doing both is better. The comparable previous experiments showed that a combination of old and new techniques produced an additive effective. Here, however, there is evidence of additional gains in knowledge when the two are combined. If replications and extensions of the experiment demonstrate that the interaction between text and graphic in information gains is a unique product of the use of information graphics to re-create complex events rather than a chance result of a small experiment, then the argument for incorporating both techniques is strengthened.

The newspaper of the future will not be an undifferentiated gray page of the 19th century, but neither will it be a comic book.

Table 1. Mean Knowledge Scores by Presence or Absence of Information in Text and Infographic.

	Infographic		
	Present	Absent	Total
Text			
Present	6.92 n=51	5.60 n=55	6.24 n=106
Absent	5.17 n=53	2.33 n=49	3.80 n=102
Total	6.03 n=104	4.06 n=104	5.04 n=208

Table 2. Analysis of Variance Summary Table

Source of Variation	SS	DF	MS	F	P	Corr.
Covariates	24.17	5	4.83	1.72	.13	
TV news	.02	1	.02	.01	.94	r=.01
Newspaper	1.47	1	1.47	.52	.47	r=.07
News magazine	.07	1	.07	.03	.88	r=.02
News interest	10.16	1	10.16	3.61	.06	r=.13
Knowledge	1.55	1	1.55	.55	.46	r=.05
Main effects	519.25	2	259.63	92.18	.00	
Text	319.22	1	319.22	133.33	.00	β=.54
Infographic	218.06	1	218.06	77.42	.00	β=.44
Interaction						
Text x Graphic	34.69	1	34.69	12.32	.00	
Residual	560.51	199	2.82			
Total	1138.61	207	5.50			R=.69

The correlations of the covariates are partial correlations, controlling for all other covariates and main factors; the betas control for the other independent variable and covariates; the correlation of the interaction term cannot be calculated from an ANOVA procedure.

Page 24

Figure 1. Infographic from USA Today (reduced) used in experiment.

Gunman slays 2 in traffic outside CIA compound

Rampage leaves 3 others wounded

By Tom Squitieri
USA TODAY

McLEAN, Va. — A gunman remained on the loose Monday after methodically shooting morning rush-hour commuters as they waited to enter the headquarters of the Central Intelligence Agency.

Two died and three were wounded in the attack by the lone gunman outside the 260-acre CIA headquarters in suburban Washington, D.C.

Fairfax County Police Chief Michael Young says there is "a common-sense connection" between the shooting and the CIA, because the gunman chose cars waiting to turn into the agency grounds.

Police, with access to CIA personnel files, say suspects include some disgruntled former CIA employees who had made threats against agency officials.

The headquarters, known as Langley, houses the agency's clandestine operatives — many of them undercover and handling covert operations abroad — and its analytical corps, which disseminates studies to policy-makers.

At least 15,000 employees work in the compound, surrounded by a high mesh fence.

The CIA identified the dead men as agency employees Frank Darling, 28, and Lansing Bennett, 66, both of nearby Reston.

Two of the wounded men are CIA employees; the third man is the employee of an agency contractor, CIA Public Information Director Gary Foster said. Their names were not released.

Witnesses say the gunman parked at the head of a through traffic lane about 7:50 a.m., jumped out and fired at least a dozen shots at point-blank range with an automatic or semi-automatic rifle, dashing between two lines of cars waiting to turn into the CIA gate.

The wounded drivers of the cars at the front of each line managed to drive on toward the guardpost inside the CIA driveway. The gunman continued his deadly rampage, his bullets killing two and wounding one in cars lined up behind the initial two.

"The shooting was over in a matter of seconds," says Private B.J. Thompson, Fairfax County Police spokesman.

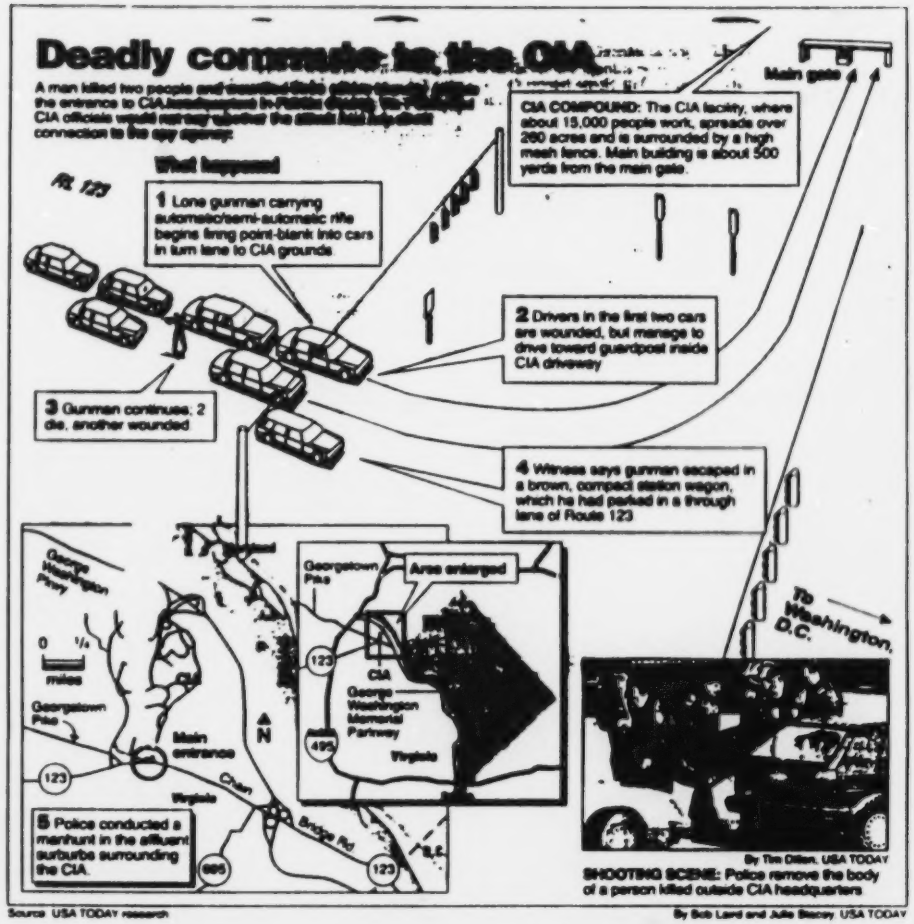
The gunman made no move toward the nearby gate, but turned and ran back to his brown compact station wagon, which was parked in a through lane of Route 123, and sped off, a witness told police.

Car windows were shattered by the bullets, and the windshield of one car had three bullet holes drilled in a triangle.

That driver was killed — but a female passenger leaped out and fled, drawing no fire from the gunman.

"He had an ice-cold stare," says Larry Bright, 28, who was sitting at the window of a commuter bus, facing the gunman, when the attack started.

"He looked like he had an attitude. He looked like he wanted to kill somebody. He was aiming at everything in sight."


Deadly commute to the CIA
A man killed two people and wounded three other people at the entrance to CIA headquarters in Fairfax County, Va. Police and CIA officials would not say whether the attack had any direct connection to the spy agency.
What happened
1 Lone gunman carrying automatic/semi-automatic rifle begins firing point-blank into cars in turn lane to CIA grounds
2 Drivers in the first two cars are wounded, but manage to drive toward guardpost inside CIA driveway
3 Gunman continues; 2 die, another wounded
4 Witness says gunman escaped in a brown, compact station wagon, which he had parked in a through lane of Route 123
5 Police conducted a manhunt in the affluent suburbs surrounding the CIA
CIA COMPOUND: The CIA facility, where about 15,000 people work, spreads over 260 acres and is surrounded by a high mesh fence. Main building is about 500 yards from the main gate.
Main gate
Rt. 123
Area enlarged
Georgetown Pike
George Washington Memorial Parkway
Virginia
Main entrance
Chain Bridge Rd
CIA
To Washington, D.C.
0 1/2 miles
N
123
495
Source: USA TODAY research
By Bob Laird and Julie Blacow, USA TODAY
By Tim Dillon, USA TODAY
SHOOTING SCENE: Police remove the body of a person killed outside CIA headquarters

He and other bus passengers hit the floor when the gunman looked their way. "You didn't know what he was going to do next," Bright says.

The main gates onto CIA grounds are usually open during the morning and afternoon as employees arrive and leave work. Private guards carrying sidearms check workers' passes and require visitors to stop and identify themselves. The agency's main building is 500 yards from the main gates.

Vice Adm. William Studeman, acting CIA director, went on closed-circuit TV to tell agency employees about the attack and promise that security would be enhanced.

Police carried out a manhunt in the affluent suburbs near the CIA headquarters for the gunman, described as a 5-foot-10 white male in his 20s with brown hair, wearing a dark jacket and dark pants.

Hours after the shootings, the dead men were still slumped in their cars, providing a grotesque backdrop for live television reports from the scene.

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SUPERMARKET TABLOIDS AS SOURCES OF POLITICAL INFORMATION

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Abstract

SUPERMARKET TABLOIDS AS SOURCES OF POLITICAL INFORMATION

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A random telephone survey of 111 persons conducted after the 1992 presidential election found significant differences in how believable respondents found a news item about a presidential candidate depending on the medium where the story appeared. Supermarket tabloids had the lowest mean believability score while CNN had the highest. Supermarket tabloids scored significantly lower on believability than all other media examined. Income was the only demographic variable that correlated with believability of tabloids. Too few respondents reported reading a supermarket tabloid during the 1992 presidential campaign to draw statistically valid conclusions about whether readers turn to tabloids for political information, but tabloids appear to be serving an entertainment, not an information, function.

SUPERMARKET TABLOIDS AS SOURCES OF POLITICAL INFORMATION

Most mainstream journalists have historically viewed tabloid newspapers with disdain, considering them vehicles for entertainment, not for dissemination of serious information. But in the 1988 presidential election, as well as the 1992 campaign, tabloid newspapers played a significant role in covering stories about political candidates (Schreiner, 1992). While the mainstream media denigrate the tabloids, they also emulate them. Despite months of rumors, allegations of Bill Clinton's marital infidelities did not receive extensive coverage by mainstream media until the story was reported in the January 23, 1992, issue of the tabloid Star (Albers, 1993; Gersh, 1992; Lamb, 1992; Rosenstiel, 1992).

Most journalists continue to draw a line between the supermarket tabloids and mainstream media. They would argue that tabloids blend fact and fiction in order to fulfill their primary purpose of entertaining readers, while the primary function of newspapers is to inform readers through factual reporting. Others, including tabloid staffers, distinguish between the two, but do not see as sharp a line (Bird, 1990).

Do members of the public make a distinction between tabloids and mainstream newspapers? Or does the public consider tabloids to be equally credible as sources of political information as other newspapers? What gratifications do tabloids provide for their regular readers? Do tabloids gratify the needs of their regular readers for political information? Have the tabloids, in

fact, become credible sources of political information as well as vehicles for entertainment?

Review of the Literature

Tabloid newspapers are not all alike. The six major U.S. tabloids differ markedly, particularly regarding the factual basis of the stories they report, with the Sun and the Weekly World News more likely to publish purely fictional accounts (Paskal, 1992; 2-Headed Tots..., 1992; Bird, 1992). The Sun is published by the same company that publishes the Globe, the company's flagship, and the National Examiner. The Weekly World News is part of a group that includes the National Enquirer and the Star (Paskal, 1992). The differences among the tabloids is apparent from reading them, according to the Star's editor, Richard Kaplan: "We are a celebrity newsweekly. We have nothing to do with two-headed babies or 9-year-old brides...We are on the checkout counters near them" (Gersh, 1992, p. 8).

Despite the mainstream media's criticism of supermarket tabloids as vehicles for entertainment and fiction, not news, it's hard to argue with their popularity. The Enquirer/Star/Weekly World News group reaches a total audience of 31 million weekly (Joseph, 1992). With combined newsstand circulations alone of more than 9 million in 1991, the tabloids are being bought by a significant segment of the American population and read by a much larger percentage.

It was the 3.8 million circulation National Enquirer that first took the tabloids out of the closet and earned the

publication "a little credibility" (Lamb, 1992, p. 1). The Enquirer did it by tracking down, purchasing and printing photos of Donna Rice sitting on Gary Hart's lap aboard a boat named Monkey Business. Those photos contributed to Hart's withdrawal from the presidential race. "That particular photograph legitimized the role of supermarket tabloids," despite their reputations and some well-publicized libel suits against them, said Everette Dennis, executive director of the Freedom Forum Media Studies Center (Schreiner, 1992, p. 34).

Four years later the Star plunged into presidential politics coverage by paying for and publishing an exclusive interview with Gennifer Flowers, who said she had a 12-year affair with Bill Clinton (Lamb, 1992). Until the Star broke the Gennifer Flowers story, mainstream journalists had not reported to any extent on allegations of marital infidelity by Clinton. After the Star broke the story, Lamb (1992, p. 1) writes, "(j)ournalists pooh-poohed the story because, after all, aren't tabloids just trash? But 300 of them showed up at a Star press conference to introduce Flowers; scores more converged on Little Rock, Ark., to check out the story." The attention the mainstream media paid to the Star's story seemed to give the story--and the tabloid--some credibility. Clinton's appearance on "60 Minutes" to answer allegations in the story also lent credibility to the story (Lamb, 1992, p. 16).

The news gathering process the Flowers story went through has been called "tabloid laundering," which Dan Goodgame, White

House correspondent for Time, describes this way: "You let the tabloids go out and pay people for stories and do the dirty things Establishment journalists hold themselves above. Then you pick up and cover the controversy, either directly or as a press story" (Lamb, 1992, p. 16).

While some journalists see the tabloids' entry into coverage of political candidates as legitimizing for the tabloids, others interpret the handling of the Flowers story as an indication that the mainstream media have lowered themselves to the level of the tabloids. Jack Nelson, Washington bureau chief for the Los Angeles Times, said, "I have seen mainstream journalism lower its standards to meet tabloid journalism" (Case, 1992, p. 38). The Freedom Forum Media Studies Center's 1992 report on coverage of the primaries had this to say: "Particularly disturbing in the 1992 campaign to date was the reactive posture of some major media, who at times ceded their news judgments to supermarket tabloids and television talk shows that are largely aimed at entertaining, not informing" (pp. 12, 13). Even Richard Kaplan, the editor of the Star, has expressed concern about campaign coverage driven by tabloids and talk shows (Albers, p. 30).

Despite the fact mainstream journalists seek to distance themselves from the tabloids, some journalists and scholars see little difference between the two. According to Bird (1990):

> Tabloids do not claim to be fiction, even if they do claim primarily to be entertainment. They report on real people and events, and their staff members are journalists. Although their emphases are different, newspapers and tabloids are located along the same storytelling continuum. Perhaps one reason newspaper people despise tabloids so

> vehemently is precisely because the line separating them from "real" newspapers is not as clear-cut as they would like to believe. (p. 386)

Bird goes on to detail the fact-checking procedures at the tabloids and argues that the tabloids and the mainstream media share similar definitions of objectivity and credibility. She argues that studies (i.e., Hinkle and Elliott, 1989) have found the tabloids can be a source of useful and accurate information and points out that a major source of tabloid news is daily newspapers. "The difference is in the style of presentation, not the subject matter" (Bird, 1990, p. 385).

In analyzing science coverage in three tabloids and three mainstream newspapers, Hinkle and Elliott (1989) found the most coverage of science in The New York Times, followed closely by the Star and the National Enquirer. The other two mainstream newspapers generally showed less emphasis on science. There were fewer "pseudoscience" stories in the tabloids than expected, with the Weekly World News printing 14 such stories and the National Enquirer only one.

Three previous academic studies have looked at tabloid readers. Lehnert and Perpich (1982) identified three types of tabloid readers based on an attitude segmentation study of tabloid readers. Most common were the "intent diversion seekers" who read tabloids primarily for entertainment. Most were women in their 40s. The second category, made up mostly of men in their 30s, were the "distracted information collectors" who read tabloids primarily for information. The "selfish believers" were

women in their 50s who find everything in tabloids credible and use that information to solve problems (i.e. health problems) in their own lives.

A uses and gratifications study of tabloid readers by Salwen and Anderson (1984) concluded that all readers use tabloids for entertainment. This contrasts with other uses and gratifications studies (i.e., Elliott and Quattlebaum, 1979; Katz, Gurevitch and Haas, 1973; Lichtenstein and Rosenfeld, 1983) that have found mainstream newspapers are used to satisfy readers' needs for information and that newspapers do a poor job of gratifying readers' entertainment needs compared to other media. Magazines, the most closely related print medium to newspapers, serve an information function while also being used by their readers for entertainment. Neither newspapers nor magazines appear to be as effective at meeting readers' needs for interaction as are electronic media (Elliott and Quattlebaum, 1979; Lichtenstein and Rosenfeld, 1983).

The most extensive study of tabloids to date is Bird's 1992 cultural study of tabloids based on extensive interviews with tabloid readers. Although Bird rarely asked overtly political questions in the interviews, she did find that most people she interviewed, especially women, "claimed to be uninterested in politics and national issues--after all, that was one reason they preferred tabloids to newspapers. Even they, however, would often make comments that showed a particular political attitude" (pp. 128, 129). She found readers of tabloids to be politically

conservative, manifested in "a tendency to be traditional, family-oriented, religious and patriotic in a nostalgic, flag-waving sense" (p. 129).

Many of those who discussed politics with Bird "expressed a strong belief that the government, media, big business, and scientists are hiding information from the American people" (p. 129). This parallels Lehnert and Perpich's finding that the one issue that united all participants in their study of tabloid readers was agreement on the importance of stories about government waste and misuse of tax dollars. As Bird points out, "(t)hese stories, and related ones about coverups, have a central place in tabloids and apparently do represent their readers' concerns" (p. 129).

Several authors have expressed concern about the blurring of the line between the mainstream press and the supermarket tabloids. While Schreiner (1992, p. 33) asserts that "no one will argue that the scandal sheets are in the same business as metropolitan dailies," he also points out parallels between the tabloids and the mainstream press which could confuse the public. He notes that paying sources for stories has been done by mainstream media as well as the tabloids and stories based on unnamed sources are common fare in metro dailies as well as the tabloids.

Mallette (1992) discovered when he addressed a group of 200 "blue ribbon" high school students that most of them apparently read the tabloids regularly, many of them apparently read little

else and "the serious press was lumped in many of their minds with the tabloid press" (p. 48). Only a third of the students indicated they fully supported the First Amendment, a third supported it with reservations and a third did not approve of the First Amendment. "(S)ome editors may not fully realize...how seriously we are all tarred by the tabloids," Mallette wrote. While he later found stronger support for the First Amendment among senior citizens, that did not lessen his concern. "What happens as they (senior citizens) fade away and the tabloid generation moves in?" he concluded (p. 48).

Pesmen (1990) argues that reading the tabloids "is the closest many Americans come to perusing a national newspaper" (p. 56). Iain Calder, the president of the National Enquirer, believes "that his paper is in touch with Middle America while the mainstream media are isolated from it" (Lamb, 1992, p. A17).

Research Questions

The preceding review of the literature suggests that the difference between the mainstream press and the tabloids is a preoccupation of journalists and scholars rather than the public. Do members of the public distinguish between the mainstream media and the tabloids? Does the public perceive tabloids to be equally credible as sources of political information as other newspapers? What gratifications do readers of tabloids seek from them? Do tabloids gratify the needs of their regular readers for political information? Have the tabloids, in fact, become credible sources of political information in addition to vehicles for

entertainment? Are age, gender, income and education level related to reading tabloids, considering them credible sources of information, and using them for information, entertainment and/or interaction? Did persons who read tabloid newspapers use information learned from the tabloids in deciding who to vote for in the 1992 presidential election?

Methodology

To answer these questions, a telephone survey was conducted of residents living in central Kentucky during the period of Nov. 16-19, 1992. Items designed to answer these questions were grouped in the following categories: perceived credibility/believability of media, media use, gratifications respondents seek from tabloid newspapers, and demographics.

To measure perceived credibility/believability of different media, the following item was included on the survey:

There was a news report that a married male presidential candidate had an affair with a government employee. The source of the story was the woman herself, who was paid to tell her story. On a scale of one to five, with one meaning you would find the story not at all believable and five meaning that you would find the story very believable, how believable would you find this story if you

1. read about it in the Lexington Herald-Leader?
2. heard about it on an ABC, CBS, or NBC television newscast?

3. read about it in a supermarket tabloid such as the National Enquirer or the Globe?
4. heard about it on a religious television network news show?
5. heard about it on a CNN newscast?
6. read about it in a news magazine such as Time or Newsweek?
7. heard about it on a local radio news program?
8. heard about it on National Public Radio news broadcast?
9. heard about it on a television show such as "A Current Affair" or "Hard Copy"?

Eleven items designed to measure gratifications readers of tabloids seek from them were also included on the survey. Ten of the gratification items are taken from Elliott and Quattlebaum (1979, p. 63). In addition, an eleventh item that dealt specifically with political information was added. A filter question was used to screen out persons who had not read a supermarket tabloid during the 1992 election campaign period so that only persons who said they had read a supermarket tabloid were asked the gratification items.

Tabloid readers were asked to respond to these items on a scale of one to five, with five meaning the respondent strongly disagreed with the statement and five meaning the respondent strongly agreed with the item:

I am going to read you eleven reasons that some people have given for reading a supermarket tabloid. We would like to know

how well these statements match the reasons you have for reading tabloids.

I read tabloids to keep up with the way government is doing its job.

I read tabloids to obtain information about daily life.

I read tabloids to get away from the usual cares and problems of everyday life.

I read tabloids to be entertained.

I read tabloids to overcome loneliness.

I read tabloids to release tension.

I read tabloids to get the feeling that I'm involved in important events.

I read tabloids to kill time.

I read tabloids to get to know the quality of our leaders.

I read tabloids to help learn about myself.

I read tabloids to obtain information about politics.

In addition to the eleven gratification items, tabloid readers were asked to use the same scale to respond to this statement: What I learned from reading supermarket tabloids helped me decide who to vote for in this year's presidential election.

All respondents were asked to list all of the newspapers and magazines they read on a regular basis and how often they watched evening network and local newscasts. Standard demographic data such as age, education, race, income and gender were also gathered.

As a crude measure of political activity, respondents were also asked if they voted in this year's presidential election.

Findings

A total of 111 questionnaires were completed. Of the 111 persons interviewed, 13 people (about 12 percent of the sample) said they had read a tabloid newspaper during the 1992 presidential election campaign period. Most of the gratification items were answered by only 12 respondents, too small a sample to draw any valid conclusions from the results. However, those results do point to directions for future research.

T-tests and correlations were conducted on the media believability items and the gratification items. Correlations were also computed between those items and demographic question results.

Respondents found the story about a presidential candidate's mistress least believable when it appeared in a supermarket tabloid. On a scale of one to five, with one meaning not at all believable and five meaning very believable, tabloids had a mean believability score of 1.28. Believability means for the other media were: tabloid television programs (1.92), religious network news programs (2.29), local radio news programs (2.58), Lexington Herald-Leader (2.75), network television news (3.09), National Public Radio (3.13), news magazines (3.19), and CNN (3.20).

Tabloids scored significantly lower on believability than all other media (see Table 1). Respondents even found tabloid

television significantly more believable than supermarket tabloids ($t=6.41$, $p<.001$). The difference between tabloid television and religious network news programs was significant ($t=2.64$, $p<.01$) as were the differences between religious network news programs and local radio news programs ($t=2.17$, $p<.05$) and between religious network news programs and the largest mainstream newspaper in the survey area, the Lexington (Ky.) Herald-Leader ($t=3.12$, $p<.01$). While there were significant differences in mean believability scores among the four least believable media, there was not a significant difference in believability between local radio news and the Lexington Herald-Leader. The Herald-Leader was seen as significantly less believable than any of the four most believed media--network television news, NPR, news magazines and CNN. There was not a significant difference in mean believability scores among the four most believed media (see Table 1).

Pearson correlations among the nine believability items revealed that eight of the nine had significant positive correlations with all of the others. The exception was supermarket tabloids. While a positive correlation was found between the believability rating for supermarket tabloids and the Lexington Herald-Leader, news magazines, local radio news, National Public Radio and tabloid television shows, no significant correlation was found between tabloids and the three television news variables--network television news, religious television news and Cable News Network (See Table 2).

There was virtually no relationship (r=.0089) between how believable respondents found supermarket tabloids and whether they had read a supermarket tabloid during the 1992 presidential campaign period. The small number of tabloid readers could have affected this finding.

A fairly strong correlation (r=.7534, p<.01) was found between whether respondents read a supermarket tabloid and whether what they learned from reading one affected their voting decision. Persons who read a tabloid were more likely to disagree with this statement: "What I learned from reading supermarket tabloids helped me decide who to vote for in this year's presidential election." This result, too, should be interpreted cautiously because of the low number of tabloid readers in this study and because three more persons responded to the statement than said they read tabloids.

Income was the only demographic variable that correlated significantly with how believable respondents found supermarket tabloids. Lower income respondents were more likely to find tabloids believable (r=-.2453, p<.05). Controlling for education, the relationship between income and believability of tabloids was still significant (r=-.2133, p<.05). No relationship was found between believability of tabloids and gender, race, education or voting behavior.

Less educated respondents were more likely to find a religious television newscast believable (r=-.1924, p<.05). No

other significant relationships were found between the believability items and demographics.

Obviously, the small number of respondents who said they had read tabloids before the election makes it impossible to do any statistically valid analysis of the eleven gratification items included in the survey. However, examining those responses may point the way for further research.

Seventy-five percent of those asked indicated they read tabloids to kill time while 58 percent of respondents said they read tabloids to be entertained. Forty-two percent read tabloids to get away from everyday problems, 25 percent to release tension, 25 percent to feel they are involved in important events, 20 percent to keep up with government, 17 percent to obtain information about daily life, 8 percent to overcome loneliness, 8 percent to know the quality of leaders, and 8 percent to obtain information about politics. No one said he/she reads to help learn about himself/herself.

Clearly, the primary gratifications these respondents received from reading supermarket tabloids are related to entertainment. The gratifications item with the highest mean score was the item dealing with killing time (mean=3.83 on a five-point scale, with 1 and 2 indicating disagreement, 3 being neutral, and 4 and 5 indicating agreement.) This was the only gratification item with which respondents registered clear agreement, although the entertainment item had a mean of 3.47, and the "get away from usual cares" item had a mean of 3.17. No

other items had a mean on the agreement side of neutral (See Table 3).

Despite the small number of tabloid readers, it's interesting to note that the information items were strongly correlated with each other and the entertainment items also correlated with each other. These two dimensions are ones frequently identified in uses and gratifications studies (i.e., Elliott and Quattlebaum, 1979; Katz, Gurevitch and Haas, 1973; Lichtenstein and Rosenfeld, 1983).

Discussion

The public seems to draw distinct lines between media in terms of how believable they find them. Even when the same story is reported by different media, whether or not a reader, listener or viewer believes the story depends on the medium being attended to. Supermarket tabloids are clearly the least believed of the media included in this study.

The fact that the major local newspaper included in this study, the Lexington Herald-Leader, was seen as significantly less believable than the four most believable media (CNN, news magazines, NPR and network television news) perhaps suggests the image of newspapers has been tarnished by the actions of the supermarket tabloids. However, the public seems to make a distinction between the tabloids and mainstream newspapers in terms of believability.

From the limited data in this study, it appears that tabloids are serving primarily an entertainment function, not an

information function. It does not appear that tabloid readers are using them for obtaining information about government and politics. Despite the fact some tabloid stories dealt with political candidates during the 1992 presidential campaign, it does not appear that the public is turning to tabloids for political information any more than readers are using them for obtaining other types of information.

If tabloids are serving as a source of political information about candidates, it may be that they are being used to "launder" questionable political stories before they are picked up and published by mainstream media. That appears to have been what happened with the Gennifer Flowers story. If the data in this study about the believability of various media are correct, the Flowers story would have had little credibility as long as it was published only by the tabloids. Only when more believable media published it did it gain some credibility. Even in the mainstream media, the Flowers story was not very believable. For the most believable media--the networks, NPR, news magazines and CNN--the mean believability scores were only in the neutral range, varying from 3.09 to 3.20.

The political story example used in this study, which was easily identifiable by respondents as the Flowers story, may not have been the best example for measuring believability of political information in various media. An inherent contaminator in the example was that the woman was paid for her story. Interestingly, that seems to have made less difference when the

story appeared in some media than in others, although the low believability means in general indicate that fact may have made the story less believable overall.

Additional studies need to be conducted using a variety of political information examples in order to get a better reading on how believable the public finds supermarket tabloids--as well as other media--as sources of political information. A sample that includes a larger number of tabloid readers needs to be used.

The fact that lower income respondents found supermarket tabloids more believable than higher income respondents also needs further examination. This finding could be indicative of a widening knowledge gap in this country, with lower income (but not necessarily less educated) persons believing--and perhaps depending on--less credible sources for information.

Almost a decade has passed since Salwen and Anderson's (1984) uses and gratifications study of tabloid readers. If the premise that supermarket tabloids are gaining credibility as sources of political information has any validity to it, then a new uses and gratifications study of tabloid readers should find more tabloid readers are gratifying their needs for political information by reading tabloids than the earlier study found. Political information in such a study would need to be defined more broadly than just information about political candidates and elections, perhaps drawing on some of Bird's (1992) conclusions about political attitudes of tabloid readers.

An inherent problem in conducting quantitative research on readership of tabloids is finding persons who admit they read tabloids. The image of tabloids may inhibit people from admitting they read them. A uses and gratifications study of tabloids would require a purposive sample of admitted tabloid readers.

TABLE 1

COMPARISON OF MEANS (T-TESTS) FOR BELIEVABILITY ITEMS
(n = 111)

	1	2	3	4	5	6	7	8	9
1. Tabloids mean=1.28		6.41c	7.40c	11.74c	12.05c	14.41c	14.64c	14.90c	13.83c
2. TV Tabs mean=1.92	6.41c		2.64b	6.55c	7.65c	10.04c	10.11c	11.75c	9.50c
3. Rel. TV mean=2.29	7.40c	2.64b		2.17a	3.12b	5.58c	6.23c	5.95c	7.34c
4. Radio mean=2.58	11.74c	6.55c	2.17a		1.59	5.09c	5.51c	6.44c	6.23c
5. Newspaper mean=2.75	12.05c	7.65c	3.12b	1.59		3.33c	3.64c	3.81c	3.87c
6. Networks mean=3.09	14.41c	10.04c	5.58c	5.09c	3.33c		.45	1.20	1.30
7. NPR mean=3.13	14.64c	10.11c	6.23c	5.51c	3.64c	.45		.65	1.03
8. News Mags mean=3.19	14.90c	11.75c	5.95c	6.44c	3.81c	1.20	.65		.38
9. CNN mean=3.20	13.83c	9.50c	7.34c	6.23c	3.87c	1.30	1.03	.38	

a= p<.05 b= p<.01 c= p<.001
means: 1=not at all believable
5=very believable

TABLE 2

CORRELATIONS FOR BELIEVABILITY ITEMS
(n = 111)

	1	2	3	4	5	6	7	8	9
1. Tabloids mean=1.28		.3639b	.0948	.2743b	.1877a	.1642	.1959a	.2302a	.0056
2. TV Tabs mean=1.92	.3693b		.2336a	.5339b	.4752b	.4378b	.4223b	.5372b	.3079b
3. Rel. TV mean=2.29	.0948	.2336a		.3446b	.2659b	.2257a	.3878b	.2187a	.4383b
4. Radio mean=2.58	.2743b	.5339b	.3446b		.4238b	.5439b	.6162b	.6789b	.5775b
5. Newspaper mean=2.75	.1877a	.4752b	.2659b	.4238b		.6004b	.5840b	.5734b	.5220b
6. Networks mean=3.09	.1642	.4378b	.2257a	.5493b	.6004b		.7624b	.6589b	.6603b
7. NPR mean=3.13	.1959a	.4223b	.3878b	.6162b	.5840b	.7624b		.6702b	.7328b
8. News Mags mean=3.19	.2302a	.5372b	.2187a	.6789b	.5734b	.6589b	.6702b		.6888b
9. CNN mean=3.20	.0556	.3079b	.4383b	.5775b	.5220b	.6603b	.7328b	.6888b	

a = p<.05 b = p<.01

TABLE 3

MEAN SCORES FOR GRATIFICATION ITEMS
(n = 12)

Mean	Gratification items
2.0	1. I read tabloids to keep up with the way government is doing its job.
2.0	2. I read tabloids to obtain information about daily life.
3.1667	3. I read tabloids to get away from the usual cares and problems of everyday life.
3.467	4. I read tabloids to be entertained.
1.75	5. I read tabloids to overcome loneliness.
2.25	6. I read tabloids to release tension.
2.1667	7. I read tabloids to get the feeling that I'm involved in important events.
3.833	8. I read tabloids to kill time.
2.4167	9. I read tabloids to get to know the quality of our leaders.
1.4167	10. I read tabloids to help learn about myself.
2.1667	11. I read tabloids to obtain information about politics.

(Strongly disagree=1, disagree=2, neutral=3, agree=4, strongly agree=5.)

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The Disability Press: A Descriptive Study

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A paper for presentation at the national convention of Association of Education in Journalism and Mass Communication, The Interest Group (AEJMC) on the Status of Persons with Disabilities, August 14, 1993

ABSTRACT

The Americans with Disabilities Act of 1990 challenges media to help citizens understand critically and appreciatively the needs and interests of people with disabilities. Like other alternative media, disability media have provided news and information that was unavailable in mainstream media. The focus of this study examines what can be learned from the disability press, and what part such publications play in media coverage of disability issues. This study found that the disability press identifies the most salient issues affecting the disabled community. And, the disability press provides a model for presenting news in disabled-inclusive ways. The publications clearly play an important role in connecting their readers to the larger political system. Also, the advocacy aspect of disability press coverage functions as a barometer for assessing negative social reality and media coverage.

THE DISABILITY PRESS: A DESCRIPTIVE STUDY

Critics bemoan the fact that it took the most sweeping civil rights legislation in more than twenty years to recognize the rights of people with disabilities, but challenge media to help citizens understand critically and appreciatively, "that what diversity requires is the capacity to live in a world where differences make a difference" (Glasser, 1992, p. 139). The task of media and of communication educators is to address issues of ableism squarely and insist that the most exacting reportorial standards for disability-issue coverage are developed and discussed (Whitney & Wartella, p. 83).

Prior research provides evidence that educators and professionals have been notably silent in addressing issues involving people with disabilities (Edwards, 1992). The mainstream press perpetuates society's ambivalence toward people with disabilities. On the one hand, in the scant coverage given to disability issues, the media support rehabilitation programs, educational and employment opportunities for people with disabilities. Yet, media continue to demonstrate avoidance behaviors with regard to interpersonal interactions with people with disabilities in media organizations and in media coverage (Hardaway, 1991; Thompson, 1982).

Mainstream media also remind the public that people with disabilities depart from standards of beauty and competence:

"Whether expressed consciously or not, the assumption is that an obvious impairment is incompatible with a productive life" (Hardaway, 1991, p. 140).

A National Council on Disability study revealed that the number of Americans with disabilities is approximately 43 million (see Americans with Disabilities Act of 1990). This statistic is comparable to the combined populations of African Americans and Hispanic Americans in the United States. Thousands of Americans join the ranks of the disabled every year. Yet reporters who cover disability issues find that some editors discourage disability reporting. Laura Mitchell, a former newspaper reporter, says that one editor told her that there was not much of a market for disability stories (Mitchell, 1989).

Studies of media coverage also suggest that disability issue coverage is not profitable. Edwards (1992) finds that .1 percent of the stories in 11 major daily newspapers were disability stories in the two years since the Americans with Disabilities Act of 1990.

John (1991), in a survey of editors and reporters, found that "editors fail to cover serious news concerning disability because they mistakenly believe that readers accept stories about disabilities only in feature treatments (p. 12)."

A study funded by the U. S. Department of Education (Clogston, 1990) content analyzed the nation's 15 largest circulation dailies and found that disability stories frequently were written by reporters or interns who had never covered

disability issues before. The study also found that language was still a problem. More than half the stories surveyed used traditional or inappropriate terminology.

Entertainment fare received similar criticisms. Augosto and McGraw (1990) have found that the portrayals of people with disabilities in the media are not realistic. Byrd and Elliot (1988) have found that most of the entertainment fare presenting disabling conditions primarily concerned psychiatric disorders. Lacking healthy role models, disabled individuals are further stigmatized.

Nevertheless, headway has been made. For instance, the Association for Education in Journalism and Mass Communication (AEJMC) has formed a committee to address issues involving people with disabilities. And, the Associated Press Style Manual provides standards for using more accurate language to discuss disabilities.

Given this interaction with communication media, people with disabilities have active media addressing their needs and interests. Like other social groups, media for people with disabilities were started as a "response to crisis" (Wilson & Gutierrez, 1985, p. 175). Parallels may be drawn from Wilson and Gutierrez' characterizations of the African-American press: "It did more than take issue with the coverage and the editorial positions found in the White press and present an alternative to them. It also reported events of interests to Blacks with dignity and pride, demonstrating that its Black readers, though

victims of racism, had a broader range of activities and interests than the mainstream press of the era presented" (1985, p. 182).

And so, the disability press is best defined as those media organizations which have primarily concentrated on disseminating information related to the disabled community. Disability media represent groups which were ignored by mainstream press and sought to champion the causes of people with disabilities in policy-making as well as social environs. People with disabilities are a meaningful audience. Edwards (1992) contends that disabled people are not "others" they are "us". He also notes that a person with a disability affects the lives of at least three other individuals increasing the impact of disability affairs, and disability products and services.

An analysis of disability press coverage provides at least three benefits. First, the recognition that disability issues are salient and valuable (see related study, Royse & Wellons, 1987, p. 113). Second, the disability press coverage could serve as a benchmark for mainstream news coverage. Disability press coverage exemplifies the sensitivity required in covering disability issues. Third, the disability press provides an outline of what to teach regarding disability issues in communications curricula.

This study examines ways the disability press offers alternative fare for people who are interested in disability issues. Also, the content of three disability publications are

examined. Such an analysis may give a deeper understanding of the role of the disability press.

What is the Disability Press?

Some critics question whether it is valid to make a distinction between the disability press and other press groups. It is not enough for a publication to be called a disability publication because the newspaper or magazine appeals to a majority of people who are disabled. Such a measure would mean that major newspapers who address a wide variety of concerns would be categorized as belonging to a disability press.

Therefore, the publication must be intended for persons with disabilities. So long as there is a cultural distinction in society between able-bodied persons and persons with disabilities there will be a place for disability journalism.

The disability press in the United States has existed since 1917. The disability press provides facts about persons with disabilities that are largely not covered by the general press and that are not likely ever to be covered. And as with other press groups, the disability press assumes an advocacy function.

The disability press also has a commercial function (see Table 1).

Table 1 about here

Most of the advertising is display rather than classified. Space is being bought by large corporations and academic institutions,

Most of the advertising is display rather than classified. Space is being bought by large corporations and academic institutions, but the bulk of the space is filled by the ads of small or service-oriented businesses.

In general the disability press has little newsstand exposure. Very few newsstands are accessible and it is too expensive to place publications on newsstands through distribution companies unless wide sale is likely. University library holdings are also sparse. In a database search of university libraries, only two received non-scholarly publications related to disabilities.

In an attempt to compile as complete a list as possible of publications, the Gale Directory of Publications and the Editor and Publisher International Yearbook were consulted (See Table 2). The list is not exhaustive. Some publications are too small to pay the cost of professional memberships and listings. Further complication of the count is that many of the publications are given away.

Table 1 about here

The physical patterns of the papers and magazines are like those of others in United States, with the exception of publications for people who are blind. As computer technology becomes more sophisticated for people with speech and hearing impairments, news presentations may become more innovative.

The Content of the Press

What do these publications tell their readers? The publications give their audiences news of the disability community as well as national and international events directly affecting citizens with disabilities.

The publications provide entertainment and editorial guidance. The publications inform their readers and promote ideas concerning the quality of life and lifestyles. The disability press ventures opinions about matters not dealt with in other presses. Many times the opinions are critical of mainstream publications' treatments of persons with disabilities and disability issues.

This content analysis examined three major disability press publications. These publications were selected because they served the most diverse audience (in terms of people with differing abilities) in the United States. This content analysis examines the following disability press publications: **The Disability Rag**, **The Mainstream**, and **Accent on Living**.

The examination covered every issue of these publications for the period July 1990 through December 1991--the period immediately after the passage of the 1990 ADA.

The unit of analysis was a news article (excluding photos and cartoons). News or feature stories, editorial or opinion column, and letters to the editor were considered to be news articles.

Six hundred and eighty-five articles were coded. The articles were coded using six categories: lifestyle coverage, disability rights coverage, issue-oriented coverage, feature-oriented coverage, general interest coverage, and disability-specific topics.

The lifestyle coverage category is defined as stories that cover everyday life activities of disabled persons, specifically issues related to lifestyle and life management.

Disability rights coverage includes items in which the author's aim was to explore a problem facing disabled Americans. This category was reserved for accounts where discussion of an inequity or problem was clearly the author's main purpose.

Issue-oriented reports were articles defined as those providing an overview of, or one aspect of a problem or issue concerning people with disabilities. Categories scaled as issue-oriented dealt with evaluation of quality-of-life issues; presented relevant statistics; discussed programmatic issues or ethical issues, and/or discussed the weaknesses of current efforts related to the disability movement.

Feature-oriented reports were defined as human interest stories focusing on individual triumphs or problems. Categories scaled as feature-oriented included the use of a case study related to personal or individual circumstances.

A general interest report was defined as a topic that may affect any individual. A disability-specific topic was defined

as an article being applicable or relevant only to people with disabilities.

The seventh item was an open-ended question: Within the lifestyle category 13 different topics were coded; within the disability rights category 4 discrete topics were coded.

Six judges coded various samples of the publication articles. The reliability coefficient was calculated by percentage of coder agreement. The intercoder reliability coefficient was .95.

Analysis

This study described the nature of disability press coverage since the enactment of ADA 1990 legislation. Table 3 shows that the largest percent of total coverage was issue-oriented (86%). Most of the feature-oriented topics concerned the achievements of people with disabilities.

TABLE 3 about here

Table 1 also shows that many of the issues (77%) are not disability-specific. Life management issues, relationship issues, and ethical issues háve generalized implications (See Table 4).

Table 4 about here

For instance, stories about life management highlighted quality of life concerns: housing, diet and exercise, sports and

recreation, driver education, health tips, selecting an appropriate car or van, shopping and gardening tips, and life experiences. However, even disability perspectives are interesting angles for mainstream coverage of these topics.

Coverage of ethical issues dealt with eugenic abortion issues and euthanasia. Relationship topics included family communication, pregnancy and infertility issues. Articles on sexuality reported on the emerging issues of sexual oppression and sexual abuse.

The disability rights coverage tended to support the notion of an advocacy/analysis function. In spite of the ADA of 1990, glimpses of the problems facing people with disabilities were evident in the disability rights coverage. This coverage offered further evidence of the role able-bodied individuals need to play in implementing the ADA of 1990. Table 4 shows that two of the largest proportions of coverage focused on barriers and activism around equal access issues and political movement activities. Many articles reported lobbying and protests efforts for creating new models of personal care and living arrangements.

Fund-raising and charity events were also criticized. The Jerry Lewis Telethon commanded special attention. Negative criticisms of the "poor thing" campaign imagery were prevalent. One criticism said: "Not only did he completely mischaracterize our lives, he used offensive language in describing people with Muscular Dystrophy. He insists on painting the most pathetic, humiliating, degrading portrait he can of disability and refuses

to see life as it is" (Matthews & Ervin, 1991, p. 50). Telephone sales by "handicapped" companies were also criticized in the same vein.

A **Mainstream** editorial sounded a theme that was echoed in much of the disability rights coverage:

> "For the ADA to be truly successful it will require that we take the initiative of pushing on the boundaries of the limitations imposed on us by society and others, pushing them ever outward until there is no distinction between our horizon and that of nondisabled individuals... But don't be fooled, it will not do the job alone. The ADA like any good tool, will only function when it is picked up and used by individuals (Jones, 1990a, p.1)."

The majority of the stories related to the ADA of 1990 explained the requirements and discussed strategies for developing public support. The stories concerning media criticism dealt with the lack of mainstream coverage and stereotypical coverage. Many stories stressed that people with disabilities were overlooked as serious sources for hard news coverage.

A reoccurring theme related to attitude change was in appropriate terminology and issue presentation. Many of the reporters referred to words like "handicapped," crippled," and physically challenged" as insensitive references. The medical and political models which created the labels were also at issue:

> "Attempts have been made before to unite us with a word that recognizes the social reality of our status. That's how "handicapped" was born. It attempted to unite us by stating that we were all "handicapped" (or put at a disadvantage) by society. But it soon acquired a negative ring: it has made us sound like so many social service cases. And the fact that it was an adjective-"handicapped" didn't help things, either. "Handicapped" what? That's always been a problem. The solution was always to call us 'THE

> handicapped'- something that grates on our ears and means, really, nothing at all (Rosen, 1991, p. 5-6)."

Other articles focused on finding new ways to describe disabled people. An article titled "Is This Word Any Better?" summarized the new movement, claiming the dialogue hoped to generate discussion to change the perception of disabled people by discussing abilities whereas present terminology discusses disabilities (**Accent on Living**, 1991, p. 28). "People with differing abilities," "people with disabilities," "survivors," "physically challenged," and "differently abled" were mentioned frequently as positive terminology in reports.

A Voice Growing Louder

The disability press, still dismissed or unrecognized by most, is now speaking with a louder, more influential voice. Ideas about the disabled community that once fell on deaf ears because they challenged the status quo are now finding their way into the mainstream after the ADA of 1990.

Editors of major mainstream newspapers are looking to the disability press for innovation. It's also becoming more common for the mainstream press to pick up stories published in other presses, thus spreading the message to an even wider audience. Aggressive reporting and commentary in the disability press is creating a host of public relations problems for celebrities and charitable organizations (i.e., Easter Seal campaigns, Jerry Lewis Telethon).

The impact of the disability press on public opinion cannot be underestimated. A Lou Harris Poll found that disabled

individuals are twice as politically active as their counterparts (see Jones, 1990b). Levin (1991) contends that if journalism students and media professionals read disability papers on a regular basis, some of the media criticisms from the disabled community could be partially defused.

What primarily emerges from the examination of disability press coverage is a sense that there is a clear tilt toward issue coverage. The publications clearly play an important role in connecting their readers to the larger political system. These issues are not only of importance to people with disabilities, but also to able-bodied individuals. The advocacy aspect of disability press coverage functions as a barometer for assessing negative social reality and media coverage.

Given the requisites of the ADA of 1990, there is an even greater need to rely upon the disability press for guidance in public education and information, as the Bush Administration realized. In 1990, President Bush called on press members to articulate the needs and concerns of the disability community for policy making related to people with disabilities.

Future research in this area would do well to examine the extent of media coverage and treatment of disability issues in other media. The word "press" in this study stands for print journalism. Disability outlets in broadcasting also deserve analysis. The growth of the disability press in terms advertising and circulation also provide interesting questions for study.

This study's findings remind us that the vitality and necessity of the disability press is much in evidence. And, the growing trends in mainstream coverage and in disability press coverage should not be lost by media scholars and others interested in the relationship between persons with disabilities, the media and society.

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Table 1 Disability Publications Open Rates[1]

(Reported in dollars)

	Open Rates
1. A Positive Approach	BW: 1,222 4C: 1,980
2. Ability Magazine	BW: 1,095 4C: 1,595
3. Accent on Living	BW: 970 4C: 1,553
4. Braille Book Review	Ads Not Accepted
5. The Deaf Blind Weekly	Ads Not Accepted
6. Exceptional Parent	BW: 2,440 4C: 3,490
7. Links	PCI: 120
8. Mainstream	BW: 967 4C: 1,862 PCI: 60
9. Paraplegia News	BW: 1,188 4C: 1,988
10. Silent Advocate	Ads Not Accepted
11. Sports n' Spikes	BW: 869 4C: 1,569
12. The Voice	BW: 1,195
13. The Disability Rag	Ads Not Accepted

BW = one-time black and white page rate; 4C = one-time four-color page rate; PCI = per column inch rate

[1] Gale Directory of Publications and Broadcast Media, 1992 124th Edition.

TABLE 2 --Disability Publications[2]

	Established	Circulation[3]
Silent Advocate	1917	25,000
Braille Book Review	1932	15,000
Paraplegia News	1946	25,000
The Deaf American	1946	Not Reported
Accent On Living	1956	19,700
The Deaf Blind Weekly	1970	110
Links	1970	5,000
Exceptional Parent	1971	50,000
Mainstream	1975	18,925
Sports 'n Spikes	1975	9,500
Listening	1977	1,220
Ability Magazine	1984	21,507
A Positive Approach	1986	36,600
The Voice	1988	Not Reported
The Disability Rag	1970	Not Reported

[2] Gale Directory of Publications and Broadcast Media (1992) 124th Edition.

[3] Total of paid and non-paid

Table 3 Audience Orientation and Story Emphasis

N=685

AUDIENCE ORIENTATION	
DISABILITY-SPECIFIC	23%
GENERAL INTEREST	77%
STORY EMPHASIS	
ISSUE-ORIENTED	86%
FEATURE-ORIENTED	14%

TABLE 4 Disability-issue Topics

N=685

LIFESTYLE COVERAGE:	
Life Management	33.62%
Role Models/Achievements	4.52%
Ethical Issues	4.23%
Personal Care Attendants	3.79%
Technology	2.90%
Barrier-Free Travel	2.62%
Government Benefits	2.60%
Jobs	2.48%
Sexuality	1.85%
Relationships	1.18%
Disability Humor	1.02%
Research	.88%
Racial Problems	.87%
TOTAL	62.63%
DISABILITY RIGHTS COVERAGE:	
Barriers and Activism	17.55%
Media Coverage and Criticism	8.62%
ADA of 1990	7.29%
Defining	3.94%
TOTAL DISABILITY RIGHTS COVERAGE	37.40%

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RELATIONSHIPS OF GENDER AND RAPE MYTH ACCEPTANCE ON SEXUAL PERCEPTIONS OF MUSIC VIDEOS**

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**Note: This research paper is based on the author's dissertation study, which was conducted while she was a Ph.D. candidate at the University of Florida in Gainesville.

Abstract

This study investigated relationships of gender, rape myths, and perceptions of males and females in music videos.

University of Florida undergraduates (n=215) saw a different series of videos and completed questionnaires. Multiple regression and *t*-tests were conducted.

Persons higher in rape myth acceptance tended to define "rape" in more restrictive terms than did persons lower in rape myth acceptance. Males and females higher in rape myth acceptance attributed relatively more responsibility to the woman for forced sex than did those lower in rape myth acceptance.

Persons describing themselves as having had sexually successful experiences were more likely to respond that the easy sexual arousal of women portrayed in videos was realistic than were persons who said their sexual experiences were less successful.

Males declared a man more justified in forcing sex on a woman when a video implied mutual sexual attraction than did females. Females tended to express more concern that videos were not disseminating safe sex messages than did males.

RELATIONSHIPS OF GENDER AND RAPE MYTH ACCEPTANCE ON SEXUAL PERCEPTIONS OF MUSIC VIDEOS

Background of the Problem

One of the more epidemic and pressing social problems confronting adolescents and college students today is the rising incidence of date rape and acquaintance rape. Though males have been acknowledged as rape victims, typically female teenagers and young adults are the most likely victims of rape, and most will be raped by people they know (Burt, 1991).

In a survey of urban Midwestern adolescents ages 14-17, 12 percent of the females and two percent of the males said that they had been raped or sexually assaulted (Hall & Flannery, 1984). Ageton (1983) reports that data clearly indicate that "adolescent victims are most often assaulted in a dating situation, by someone they know, who is in their same age range" and that "older adolescents are more at risk than their younger counterparts of encountering the use of physical force to secure demands for sex" (p. 44).

Noted psychologist Mary Koss and Ms. magazine conducted an extensive national study, sampling 6,000 college students on 32 college campuses about the prevalence and incidence of acquaintance rape. The data showed that significant numbers of women are raped on dates or by acquaintances: Eighty-four percent of those

raped knew their attacker, and 57 percent of the rapes happened on dates (Warshaw, 1988).

In view of these research findings, the media--particularly television and especially music videos--have been accused of portraying sexually aggressive behavior as normal and, therefore, have encouraged teenagers to think it is acceptable for a male to force a female to have sex (Rice, 1990; Bechhofer & Parrot, 1991; Baxter, De Riemer, Landini, Leslie, & Singletary, 1985; Lowry, Love, & Kirby, 1981; Sherman & Dominick, 1986; Gore, 1987).

At the center of many messages implied in media sexual content are what Burt (1980) refers to as "rape myths": "prejudicial, stereotyped, or false beliefs about rape, rape victims, or rapists" (p. 217). Rape myths include assumptions that women secretly want to be raped, that women cannot be raped against their will, that women provoke rape by leading men on, that rapists are abnormal, that rape is rare, that all rape victims are prostitutes, and that rapes occur because men have uncontrollable needs (Bourque, 1989).

LaPlante, McCormick and Brannigan (1980) state that adolescents learn "sexual scripts." These scripts provide "norms which prescribe that the man should be the initiator of sexual activity while the woman is the

limit setter" (p. 339). By the time an individual reaches adolescence, he or she is aware of the "double standard," the prevailing script for sexual morality in most cultures which stipulates that female sexual behavior should be more restricted than male sexual behavior (Safilios-Rothschild, 1977).

For the dating couple, Burkhart and Stanton (1988) suggest that such scripts provide guidelines for initiating and participating in sexual interaction in novel situations: "We have already found that individuals, particularly males, may include in their sexual scripts general rape-supportive beliefs, which they bring into the dating situation" (p. 58).

This suggestion that rape-supportive beliefs fuel male sexual scripts is heightened when different sets of sex-role expectations in sexual interactions are held by men and women--leading to differential interpretations of interpersonal and contextual cues. For example, Knox and Wilson (1981) found that less than 15 percent of their male and female undergraduate subjects reported that their dates always shared their understanding regarding how long couples should wait before engaging in three sexual activities (kissing, petting, intercourse). Large discrepancies were obtained between males and females regarding the degree of acceptable sexual conduct.

Regarding intercourse, males tended to want more sex sooner in the dating relationship than females. Almost half of the males felt that intercourse was appropriate by the fifth date in contrast to about 25 percent of the females.

The large role that television and especially music videos play in adolescents' media use leads to various speculations concerning their interpretations of the videos' sexual messages. For example, Strover (1991) examined how adolescents react to and interpret certain popular media (rock video) messages. Teens tended to remember and agree with the content of videos which affirmed their existing ideas about sexual behavior.

Brown and Schulze (1990) considered how race and gender of older adolescent audiences affect their interpretation of music videos. Their data indicate that sex and culture may influence and differentiate how teen viewers interpret videos. For instance, while almost all of the white females and white males saw Madonna's "Papa Don't Preach" as being about teen pregnancy, a large proportion of the African-American students thought the "baby" of which Madonna sang was her boyfriend and not an unborn infant. In Madonna's "Open Your Heart" video, males of both races were more likely than females to see the primary theme as sexual

love, while females were more likely to interpret the video as showing a platonic relationship between a female erotic dancer and a prepubescent boy who observes her and then interacts with her at a local arcade/peep show.

Hansen and Hansen (1988) proposed that mass media depictions of men and women: (1) represent sex role stereotypes; (2) occur undeniably frequently in media-simulated society; and (3) play a role in promoting the chronic accessibility of schemas that are traditionally gender-stereotypical.

Theoretically, then, one can find in schema theory and cultivation analysis a basis for justification and explanation for the active audience studies and differences in gender interpretations. A "schema" is a cognitive structure, a network of associations that organizes and guides an individual's perception. A schema functions as an anticipatory structure, a readiness to search for and to assimilate incoming information in schema-relevant terms. Schematic processing is thus highly selective and enables the individual to impose structure and meaning onto the vast array of incoming stimuli. Schema theory construes perception as a constructive process wherein what is perceived is a product of the interaction between the incoming

information and the perceiver's preexisting schema (Bem, 1981).

Gerbner's theory of cultivation analysis suggests: (1) that media teach people about American values and myths; and (2) that those who spend more time watching television (e.g., heavy viewers) are more likely to perceive the real world in ways that reflect the most common and repetitive messages of the television world, compared with people who watch less television but are otherwise comparable in important demographic characteristics (Morgan and Signorielli, 1990).

Statement of the Problem

Building from the previous background section, the central research questions can be stated:

(1) Does the viewing of televised sexual cues (i.e., music videos as visual stimuli) serve to prime activation of rape myth acceptance in subsequent judgments about sexual interaction outcomes?

(2) Do rape myth acceptance attitudes influence what is selectively perceived in viewing music video sexual cues and subsequently predict traditional (vs. non-traditional) sex-role stereotypical schemas or scripts as evidenced through attributions of responsibility for rape?

(3) What external factors (e.g., date location, mode of transportation, date activity, alcohol abuse, relationship status, clothing, personal demeanor, etc.) as depicted in music videos are likely to influence men and women in allocating responsibility by gender in date rape scenarios?

(4) Do music videos impart messages that responsibility and discretion in partner selectivity and safe sex should be taken before two people engage in sex?

(5) Do persons who report satisfaction in their sexual encounters differ in their perceptions of the realism of sex as portrayed in music videos?

Purpose of the Study

The purpose of this study is to find and examine: (1) relationships between rape myth acceptance and how music videos may function as sexual visual cues or primes for activating schema-based outcomes for sexual interactions depicted in music videos; and (2) differences between males and females in how they interpret various sexual messages in the media.

Ultimately, heterosexual dating couples and/or acquaintances, college coeds and male students, women as a whole, juries, television writers and music video producers all stand to benefit from this study:

(1) Males and females interacting in social and/or intimate settings (particularly on college campuses) need to be made aware that, as two distinct gender groups, they may harbor firmly ingrained rape myths. They need to realize that men and women might derive different perceptions, interpretations, messages, lessons, and cues from media sexual content which may spill over into their actual sexual interactions. Men and women both need to be more sensitive to the sexual overtones that each one attaches to or transmits in certain sexual gestures and behaviors so that misunderstandings do not culminate in rape;

(2) Women (especially adolescents and incoming college freshman coeds) need to be informed and advised about the conclusions others may reach about responsibility for their actions, so women may deter potentially sexually aggressive scenarios that can lead to court cases;

(3) Juries might use such information in their deliberations relative to subtle distinctions and conclusions that individuals make--consciously or subconsciously--based on gender and the attribution of responsibility;

(4) Television writers/producers and music-video producers need to be aware of different ways that

audiences may react to certain plot situations and that sexually-explicit programming may serve as primes for activating the audience members' individual sexual scripts.

Rationale and Hypotheses

This researcher has used the construct "adolescent" as the primary research focus of this study. However, by extension, college-age students comprised this research sample because of the unavailability of high schoolers for this study.

At the heart of these hypotheses are the ideas that people are active processors of media messages and that people interpret and differentiate seemingly homogeneous media content on an individual basis.

H1: Rape-myth accepters are more likely than nonrape-myth accepters to define rape in a more restricted way.

Shotland and Goodstein (1983) examined subjects' rape attributions via their reading a graphic description of a sexual act in a dating context. Undergraduate subjects were presented with descriptions of a date in which the level of force (low or moderate) used by the male to obtain sex and levels of timing (early protest, moderate protest, late protest during foreplay) and types of protest (verbal protest or physical protest)

against sexual activity used by the female were manipulated. The researchers found that: (1) subjects were more likely to blame the female and to perceive her as desiring sex when the the male was portrayed as using little force and the female was portrayed as protesting late during sexual foreplay; (2) subjects were more likely to define the hypothetical incident as rape when there was more force used by the male and more intense protest by the female early during sexual activity. In addition, they found that those subjects with more egalitarian attitudes towards women--as measured by an Attitudes Towards Women (ATW) scale--were less likely to perceive the female as desiring sex, less likely to blame the victim, and more likely to define the incident as rape.

In addition to physical force and physical resistance, Bourque (1989) found data suggesting that whether the victim knew the assailant and where the sex occurred are factors determining whether a sexual encounter is defined as a rape. Many people do not even consider acquaintance rape to be "real" rape (Klemmack & Klemmack, 1976); the greater the acquaintance between the victim and assailant, the less "serious" the rape is judged (L'Armand & Pepitone, 1982).

Hypothesis One is also supported by Burt and

Albin (1981) who found that greater acceptance of interpersonal violence renders one less willing to convict a hypothetical rapist and that stronger rape myth acceptance leads to a more restrictive definition of rape. These authors write that feminist analysis of rape implies that rape myths influence how broad or how restrictive a person's definition of rape will be, adding that restrictive definitions are rape-supportive because they deny the reality of many actual rapes. However, they posit that rejection of rape myths has an opposite effect: "It leads to including more concrete instances within the definition of what is a real rape, with appropriate consequences" (Burt & Albin, 1981, p. 213).

The themes of (1) use of force, (2) intense protest by the woman during the early stages of sexual activity, (3) lack of acquaintance between a man and a woman, and (4) location of the sexual encounter that does not imply the female's consent to sex appear to activate culturally entrenched signals of limited, traditional definitions of rape.

H2: Rape-myth-accepting males and females will accord a higher degree of responsibility to females for appearing to promise sex in a TV drama or music video than will nonrape-myth-accepting males and females.

Hypothesis Two is supported by research conducted by Muehlenhard, Friedman and Thomas (1985), who found that

both men and women with traditional attitudes saw forced sex as more justified than did subjects without such views. Coller and Resick (1987) found that women with more traditional gender-role attitudes blamed victims more in a date rape situation than those with more egalitarian attitudes and saw the victim as "leading him on."

H3: In completing the plot of a music video showing mutual sexual attraction, males will declare males more justified than will females in forcing a woman to have sex.

Hypothesis Three structures a rationale from research by Donnerstein and Berkowitz (1981), who posit that viewing an act of aggression in which the victim responds in a positive manner should reduce aggressive inhibitions on the part of the viewer. The belief of these males that force or coercion is more justified when the woman is visibly happy about sex will be in operation when there is clearly mutual sexual attraction; in such cases, the male is more justified in forcing her. Such males, more than females, are typically primed from the messages in the external environment to think that women are more than ready physically and emotionally to please and to perform sexual favors on demand.

H4: Sexually active males and females who have had successful sexual experiences will judge easily aroused women in music videos as being more realistic than will sexually active males and females who have not had successful sexual experiences.

Baran (1976) found there was a negative relationship between the subjects' perceptions of the characters' sexual pleasure and prowess and their own initial and subsequent sexual satisfaction. However, in direct opposition to his hypothesis, those who perceived media portrayals as real reported greater satisfaction in first and subsequent coital experiences. Regarding cognitive processes, one might arguably speculate that college students had reached relatively higher levels of sexual competency and saw the glamorized media presentations as more accurate.

H5: Women will express more concern about the lack of care in preparing for implied sex as portrayed in music videos than will men.

Hypothesis Five is well supported in observations by Victor (1980) about the female adolescent subculture (and by extension, the adult female subculture). He says that among adolescent girls, sexual activity cannot be a simple source of "play" and that adolescent girls worry about being victimized sexually, about becoming pregnant and about being shamed. Recently, females would be expected to add to that concern a focus on such sexually transmitted diseases as AIDS and genital herpes.

Women, in particular, should be acutely more concerned about the possible transmittal of AIDS and herpes than men. With female acquaintance-rape victims, research indicates that these women fear pregnancy and

sexually transmitted diseases (STDs) much more than actual physical injury (Warshaw, 1988).

Method

Design

The study repeated a 2 X 2 design. Data for each of the five hypotheses were analyzed using a between-subjects design. Hypotheses One, Two, and Four were tested with multiple regression analysis comprising two independent variables and one dependent variable; Hypotheses Three and Five were tested with *t*-tests.

Stimulus Materials

Three separate pretest instruments were developed and used to determine which of the more than 100 hours of recorded music videos from cable's Music Television (MTV) and Black Entertainment Television (BET) would best fit into three categories.

For the pilot test and actual experiment, seven test instruments were used: (1) Burt's (1980) Rape Myth Acceptance (RMA) Scale; (2) a thermometer index delineating male and female responsibility for sexual intercourse under varying hypothetical scenarios and two statuses of the couple's relationship; (3) a general information questionnaire which elicited demographic facts about the subjects and past and present music-video viewing; (4) an index to assess the level of restrictive-

ness of subjects' definitions of "rape"; (5) indices to assess perceived realism of the sexual arousal of women in music videos and to assess subjects' perceived personal successes in sexual encounters; (6) indices to assess the subjects' perceptions of the care and concern regarding sexual behavior of performers in music videos; and (7) indices evaluating the justification of forced sex when mutual sexual attraction exists between a man and a woman.

Measures

Rape-myth-accepter. Burt's (1980) Rape Myth Acceptance Scale (RMA), which can be considered an index, is used as a continuous variable. Higher scores on this index indicate greater likelihood of acceptance of stereotypical and prejudicial statements about rape, rape victims, and rapists in areas pertaining to a female's clothing and behavior, her sexual reputation, locations of the sex act, and the male sex drive.

Ten Likert-type items from Burt's (1980) RMA Scale were individually scored on a 7-point measurement scale. Responses were recorded so that scales ranged from (1) "strongly disagree" to (7) "strongly agree."

RMA Scale items were summed to yield a total score. Sample items included such statements as, "A woman who goes to the home or apartment of a man on their first

date implies that she is willing to have sex."

Level of restrictiveness in defining "rape".

Subjects were asked to consider whether sex that occurred in a variety of sexual scenarios should be regarded as "rape." Some of these definitions would fit illustrations of the stereotypical, traditional concept of "rape" (i.e., threats, struggle, unwillingness, nonacquaintance between victim and assailant), while other definitions would reflect illustrations of more liberal or modern concepts of "rape," including date or acquaintance rape scenarios (i.e., flirting, alcohol use, familiar environment, casual acquaintance).

The concept was assessed using 14 Likert-type items based on a 5-point measurement scale ranging from (1) "definitely rape" to (5) "definitely not rape." Sample items included such statements as: "A male and a female are well acquainted with each other; they live on the same block. In spite of her protests, they have sex. Would you define this sex act as a "rape"?

Gender. Sex was coded "1" for female and "2" for male.

Degree of attributed responsibility for sex. Respondents were presented with various sexual scenarios (hypothetical situations) in which subjects were to determine which gender (male or female) was more

responsible for the sexual intercourse that occurred after each situation that could appear on television or during music videos. (Subjects did not actually watch music videos here but were instructed to imagine that they had just viewed these scenarios on television.)

The same 10 situations were presented twice. In the first section, the subject was asked to attribute responsibility when the couple had "just met" for the first time. In the second section, the subject was to presume that, when the situation occurred, the couple had been "dating" on a regular basis.

Within these hypothetical situations, the only differences in wording were that on some questionnaires the man "insists" that the woman have sex, while in others the man "forces" the woman to have sex. One example of a hypothetical situation was: "A woman agrees to kiss, neck, or pet with a man and things get out of hand, and he insists that they have sex (or in other questionnaires, "he forces her to have sex"). How should the male/female responsibility be divided when they have just met (or in other questionnaires, "when they are dating")?"

Scores for the tmermometer attributions of responsibility for each gender were divided into percentages for male and female that were required to sum

to 100%. Subjects were asked to scan two thermometer illustrations (one for males and one for females) ranging from 0% to 100%. Two spaces were provided beneath each scenario for the subject to write in the percentage of responsibility he or she would attribute to each gender. For example, a higher percentage of responsibility attributed to the man imputed less responsibility to the female, and the same was true for the inverse relationship.

Mutual sexual attraction. The music videos initially selected through student pretests were judged as unclear examples of mutual sexual attraction and were subsequently eliminated. Instead, respondents were instructed to assume that they had just seen a music video and to evaluate the sexual outcomes of music video scenarios involving mutual sexual attraction. Physical, nonverbal cues or signals given off by both men and women to indicate that each was sexually attracted to the other included smiling and prolonged eye contact, mutual caressing, kissing, fondling and close physical contact.

The items on the questionnaire typically included statements such as this one: "A man and a woman display mutual sexual attraction for each other by long, lingering gazes into each other's faces. The man later wants to have sex, but the woman protests. Sex occurs

without the consent of the woman. How justified was the man in proceeding with sexual intercourse?" These five conditions were measured using five 7-point measurement scales ranging from (1) "strongly justified" to (7) "strongly unjustified."

Personal status of sexual activity and personal assessment of sexual success. Only the subset of sexually active subjects responded to these statements. Subjects answered whether they perceived that their sexual experiences had been successful in terms of their ability to obtain self-satisfaction, to attract a sexual partner, and to arouse others and satisfy their sexual needs. For those sexually active persons, a score on Likert measurement scales of 7 was assigned to responses indicating sexual experiences judged as "very successful," while a score of 1 was assigned to responses indicating sexual experiences judged as "very unsuccessful."

The following is one of three statements: "If you are sexually active or have been sexually active at some point in time, would you say that the majority of your sexual encounters have been successful in terms of your own sexual satisfaction?" An additional category stated: "Question does not apply to me. Never Sexually Active."

Perception of realism of female sexual arousal in music videos. This variable was measured using a 7-point Likert measurement scale item that read: "In music video #1 (and #2), how realistic is the depiction of the sexual arousal of the woman?", with responses ranging from (1) "strongly realistic" to (7) "strongly unrealistic."

Expression of care and concern in preparing for sex. Subjects were asked to describe the extent of the care and concern for safe sex shown in music videos they had watched and their attitudes toward safe sex portrayals in music videos. One question was the following: "In the music videos I have seen, most of the actors would be unlikely to carry the AIDS virus because they appear to be attractive, healthy, and virile, and thus, harmless". Responses ranged from (1) "strongly disagree" to (7) "strongly agree". Multiple-choice type responses were also included. Other topics covered here included personal questions about male and female fears about engaging in sex, and contraceptive use.

Subjects

Subjects were 215 undergraduates enrolled in two large-group lecture classes for introductory courses in public relations (n=98) and advertising (n=117) in the University of Florida's College of Journalism and

Communications. Students were recruited to participate on a volunteer basis. Data were collected during November 1992 from the experimental sample, which consisted of 111 males and 104 females.

Procedure

Pretests were conducted simultaneously with one undergraduate class in the College of Journalism and Communications in October 1992. These were to ensure that student input was used to determine which of 100 plus hours of taped music videos were the best examples for depicting (1) sexual cues, (2) mutual sexual attraction, and (3) easy sexual arousal of women in music videos. The researcher chose a group of music videos that would seem most likely to show these characteristics. The music videos selected for containing examples of women appearing to promise sex were Billy Idol's "Cradle of Love" and Michael Jackson's "In the Closet." The music videos selected as good examples of ease of female sexual arousal were "Cradle of Love" and Jane Wiedlin's "World on Fire."

The "Cradle of Love" video depicts a young woman who enters the apartment of her male neighbor, whom she had not previously met, ostensibly to play a cassette tape on his stereo. As the tape plays, the woman then proceeds to undress partially and dance around the man's apartment.

She enters his bedroom and performs sexual-appearing gyrations on his bed as she rips off the bedsheets. Finally, she exits the bedroom, "stalks" him by crawling on all fours and finally plants a passionate (and obviously unsolicted) kiss on him before leaving.

The "In the Closet" video depicts Michael Jackson and a scantily dressed model Naomi Campbell in what might be called an erotic flirting and mating ritual. Throughout the video, they dance with, fondle and gyrate against each other.

The "World on Fire" video traces the sexual conquest of a young woman (who has a seemingly insatiable sexual desire) from a local bar to a tumultuous "rocking bed" scene in which she is pictured with a man that she has just met.

Experiment. The experimental sessions were conducted during November 1992; subjects could choose to attend one of seven sessions. They were given the questionnaire instruments, and the researcher read the instructions aloud for the students. They were instructed that, about midway through the questionnaires, they would be shown two music videos, and afterward they would complete the remaining instruments. All subjects (N=215) received the following questionnaires to test accompanying hypotheses: RMA Scale (for Hypotheses One and Two), thermometer scale

for sexual responsibility (for Hypothesis Two), demographic information, and level of restrictiveness scale for "rape" definitions (for Hypothesis One).

Subjects in the public relations class (n=98) received two additional questionnaires for mutual sexual attraction as justification for forced sex (Hypothesis Three) and sexual cues noted in music videos. They saw two videos: "Cradle of Love" and "In the Closet".

Subjects in the advertising class (n=117) received two questionnaires other than the ones received by all students concerning: (1) realism of the ease of sexual arousal of females in videos (for Hypothesis Four); (2) attitudes and behaviors concerning safe sex as shown in the videos "Cradle of Love" and "World on Fire" (Hypothesis Five).

Results for Hypotheses

Findings are presented in order of the five hypotheses. The reader should note that, in different hypotheses, the same variables may be used (1) as either independent (predictor) or dependent (criterion) variables, and (2) as either control variables or analysis variables. "Control variable" is the term used in describing a "spurious relationship": an original relationship that is explained away through the

introduction of a control (or test variable) (Babbie, 1989). This researcher considers an "analysis variable" to be the predictor variable that a researcher originally plans to enter into an equation; its inclusion is essential to testing a stated hypothesis.

Hypothesis One

Hypothesis 1 was supoprted. Results of multiple regression analysis indicated that when gender was controlled for, rape myth acceptance remained s significant predictor of how people defined "rape". The greater a person's belief in rape myths, the more likely that person would be to define "rape" restrictively.

Insert Table 5-1 About Here

Hypothesis Two

Hypothesis Two was supported. Multiple regression analysis indicated that when gender was controlled for, rape myth acceptance remained a significant positive predictor of the degree of responsibility attributed to females for appearing to promise sex--in both "just met" and "dating" situations.

Insert Table 5-2 About Here

Related to Hypothesis 2, two additional multiple regression analyses were conducted to determine whether questionnaire wording indicating type of pressure ("insists" or "forces") used by males to obtain sex from females in "just met" and "dating" situations would predict degree of responsibility attributed to females for sex. Analysis was conducted in both "just met" and "dating" conditions on the independent variables of type of pressure, rape myth acceptance and gender, which was a control variable. Results revealed that among the possible predictor variables for degree of responsibility attributed to females for appearing to promise sex, type of pressure used and rape myth acceptance emerged as more significant predictor variables than gender in both conditions. Subjects told that the man "insisted" on having sex attributed greater responsibility for sex to the woman.

Insert Table 5-3 About Here

Without controlling for rape myth acceptance, additional *t*-tests were also run showing breakdowns by gender and by "just met" and "dating" conditions. Only the female responsibility portion of the thermometer scale was examined. The reader should note that males and females

generally attributed the overall greater percentage of responsibility to the male for sex that occurred across all conditions and variables.

Male versus female on forced sex. When the term "forces" was used in themometer-scale, significant differences in the mean scores for males (n=51) and females (n=54) in attributing responsibility to the woman were noted and summarized here. Generally, males moreso than females were found to attribute more responsibility for forced sex to the woman in "just met" situations when (1) she flirted with the man, and (2) changed her mind after initially consenting to engage in sex.

In "dating" situations, males moreso than females were found to attribute more responsibility for forced sex to the woman when (1) the man took the woman on an expensive date, (2) the woman petted with the man, (3) the woman extended the man an invitation for a date, (4) the woman went braless or wore skimpy clothes on a date, (5) the woman got drunk, (6) when the woman flirted with the man, and (7) when she changed her mind after initially consenting to engage in sex.

Insert Table 5-4 About Here

Hypothesis Three.

Hypothesis Three was supported. T-test results suggested that there were significant differences in mean scores between males and females, with males showing a tendency to declare males more justified in forcing a woman to have sex in all five mutual sexual attraction conditions: (a) man and woman gazed intensely into each other's faces; (b) man and woman caressed, kissed, and fondled each other; (c) man and woman danced together erotically; (d) woman asked man to sit next to her on a bed or sofa; (e) woman took off some of her clothes in the man's presence. Rape myth acceptance was not controlled for here.

Insert Table 5-5 About Here

Hypothesis Four

Hypothesis Four was supported. Muliple regression analysis indicated that perceived sexual success in sexual encounters remained a significant predictor of perceived realism of female sexual arousal in music videos when gender was controlled.

Insert Table 5-6 About Here

Hypothesis Five

Hypothesis Five was only supported partly. T-test results suggested there were significant p-values on only one variable. Females were more likely to agree that music videos should spend more time advocating safe sex ($M=5.02$) than were men ($M=4.47$), $t(115)=1.68$, $p=.045$.

Discussion

General Implications

Rape Myths and Restrictiveness in "Rape" Definitions

Persons high in rape myth acceptance showed a greater tendency to believe that "rape" definitely had occurred only when certain traditional factors were part of the circumstances under which forced sex took place: (a) promises of bodily harm from the assailant; (b) vigorous struggle on the part of the female against her attacker; (c) nonacquaintance between the victim and assailant; (d) unwillingness on the part of the female to engage in sex.

Persons low in rape myth acceptance, while also willing to identify traditional factors as instances of definite rape, were more willing than persons high in rape myth acceptance to label nontraditional circumstances as instances of definite rape. Such circumstances included instances in which the female (a) aroused the male sexually, (b) led the male on, (c) projected a promiscuous reputation, (d) had dated the male for a while, (e) had

gotten drunk, (f) had accepted an invitation to go to the male's home, (g) petted with the male, and (h) was willing to have sex initially but then changed her mind. One explanation for this finding is that people high in rape myth acceptance may have less complex schemas, and hence, a more narrow view of factors that constitute "rape".

Rape Myths and Attributions of Responsibility to Females

As predicted, rape myth acceptance was a stronger predictor of responsibility being attributed to the woman for sex than was the gender of the subject. Generally, both males and females assigned more total responsibility to the male in all hypothetical scenarios. Nevertheless, across both "just met" and "dating" conditions, males and females who believed in rape myths assigned greater responsibility to the female for her role in the sex that occurred.

A more in-depth analysis of such conflicting attitudes revealed that males tended to attribute more responsibility to the female under specified circumstances; these findings can be attributed to the fact that rape myth acceptance was not held constant as was the case in the general analysis.

For example, if a couple had "just met" prior to sex occurring and the woman had (a) flirted with the man, or (b) changed her mind after consenting to have sex, males

tended to hold her more responsible for what happened than did females.

If the couple had been "dating" for a while before sex act occurred and (a) the man took the woman out on an expensive date, (b) the woman petted with the man, (c) the woman invited the man on a date, (d) the woman wore skimpy clothes on the date, (e) the woman got drunk, (f) she flirted with the man, and (g) the woman changed her mind after consenting to have sex, males still tended to assign her greater responsibility for what happened than did females.

Male subjects generally seemed to harbor an attitude that female behavior with sexual overtones in "dating" situations gave signals that forcing sex under these conditions can be done with less or no guilt.

Conversely, women may have totally different perceptions of rape, not only because they are of the same gender as the victim and can therefore empathize with her plight, but also because (unlike males) they may have an expectation of one day having a similar experience.

Across all variables in both the "just met" and "dating" conditions, subjects were more likely to attribute responsibility to the woman when the questionnaire read that the man "insists on sex" than when it read the man "forces sex" on the woman. Once again,

subjects appeared to be more sympathetic to the plight of the female who was perceived as being physically "forced" into sex than to the female who entered into sex with a man because he simply "insisted" on it. These differences in wording might prove to be problematic in a court of law when one considers the implications of emotionally-laden words such as "forces" when compared with words like "insists".

Gender and Mutual Sexual Attraction as Justification for Forced Sex

Males were more likely than females to believe that if a male and female displayed mutual sexual attraction in their gazes, their caresses, their erotic dancing, their bedroom behavior, and their shedding of clothing, then a man was more justified in forcing a woman to have sex. Males may have felt that if a woman impressed upon the man that she was sexually attracted to him (and he to her), then why should he not proceed to do sexually what he perceives she really wants him to do? Research by Donnerstein and Berkowitz (1981) supports this position that males may believe that force or coercion is more justified when the woman appears visibly happy about the possibility of engaging in sex.

The researcher also emphasizes that rape myth acceptance was not included as a predictor variable in this analysis. It is quite possible, then that males'

greater tendency to declare men justified in forcing sex reflects males' acceptance of rape myths. If rape myth acceptance had been included in the analysis, gender might not have remained a significant predictor.

Sexual Experiences and Perceptions of Realism in Female Sexual Arousal

Level of perceived personal sexual success was a stronger predictor of the subsequent perceived level of realism of the ease of female sexual arousal as depicted in music videos than was gender. These findings were somewhat similar to general findings reported by Baran (1976) who found that there was a relationship between satisfaction in one's sex life and the perceptions of media sexual portrayals.

This lends some credence to the idea that music videos may be imparting messages about women's ability to become easily aroused and that a person's level of sexual success may be influencing whether sexual behavior as depicted in music videos is perceived as real. This occurrence may be a case of art imitating life: persons who were generally pleased with their sex lives tended to experience a sense of solidarity with what they were vicariously experiencing on television. It is, of course, possible that they exaggerated their sexual successes and secretly projected their desires that their sexual encounters might rival those of the music video couples.

Gender and Concern About Preparation for Safe Sex in Music Videos

Women were more likely than men to express a personal concern that music videos were not doing enough to disseminate messages advocating safe sex. Their responses in prioritizing fears about engaging in unprotected sex would appear to support this concern. A majority of females in this sample listed AIDS as the chief concern, with pregnancy in second place. No female was concerned about getting a bad reputation from engaging in unprotected sex--perhaps a reflection of the sexual revolution's impact in allowing women greater sexual freedoms. Males listed AIDS as their chief concern, with impregnating a female as a second concern.

More than half of the subjects disagreed that actors in music videos would be unlikely to carry the AIDs virus because they looked attractive and healthy. This could be a very small indication that college students may not be accepting the apparent health of their potential sexual partners at face value. Given a choice, they may now want to consider getting to know their partners very well before becoming intimate with them.

Limitations and Considerations

Internal Validity

This study produced some intriguing findings, many of which are consistent with the assumptions that gender

and rape myth acceptance influence people's perceptions of male-female sexual interactions in music videos and other hypothetical situations. Nevertheless, marked shortcomings can be viewed in terms of internal validity.

There was a certain amount of control over the isolation of the experimental variables of music video sexual content (women appearing to promise sex, women appearing easily sexually aroused). Pretests were conducted with undergraduates to ensure that (a) the music videos selected portrayed these instances of sexual behavior from the students' standpoint and (b) students were indeed getting these preliminary messages from music videos about sexual behavior.

Reliability and validity of the test instruments and scales were established by using reliability and correlation analyses.

Even with these safeguards, some possible factors which may have affected the integrity of the results should be noted. Measures to reduce the nonequivalence of the groups in this study through random assignment to treatment and control groups were not implemented. This decision was made by the researcher for reasons of convenience. Subjects volunteered to attend sessions that best fit their schedules.

The self-reporting format of the questionnaires may have allowed some respondents to alter, distort, or misrepresent the true state of their attitudes. Some subjects, even though their anonymity was secure, may have rated items in relationship to social desirability or evasiveness. The time factor may have caused some students to mark some items hurriedly and carelessly just to get finished early.

External Validity

A few factors that are threats to external validity also must be noted here. First, random selection of a sample from a defined population of individuals was not employed here; the subjects tested comprised a convenience sample of college students. Therefore, the researcher cannot infer here that what was found in the sample is also likely to be true of the population from which the sample was drawn. The results of this study can be applied only to the sample under analysis. Random selection and/or quota sampling techniques applied in a subsequent study may augment the credibility of generalization to some larger population.

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Table 5-1

Standardized Regression Coefficients for Predicting Restrictiveness of "Rape" Definitions

Predictors	Beta	r	p
Gender (control variable)	-.006	.211**	.924
Rape Myth Acceptance	.579	.577**	<.0001
Intercept	.613		
F	52.882		
p	<.0001		
Adjusted R^2	.327		
n	215		

Note: Gender is coded as "female" = 1 and "male" = 2.
**p < .001.

Table 5-6

Standardized Regression Coefficients for Predicting Perceptions of Realism in Ease of Female Sexual Arousal

Variables	Beta	r	p
Gender (control variable)	.052	.158	.258
Sexual Success	.762	.636**	<.0001
Intercept	.316		
F	147.748		
p	<.0001		
Adjusted R^2	.594		
n	202		

**p < .001.

Table 5-2

Standardized Regression Coefficients for Predicting Degree of Responsibility Attributed to Females for Sex in "Just Met" and "Dating" Conditions

Predictors	Beta	r	p
	Just Met Condition		
Rape Myth Acceptance	.284	.279**	<.001
Gender (control variable)	-.015	.092	.840
Intercept	12.743		
F	8.967		
p	<.0003		
Adjusted R^2	.069		
n	215		
	Dating Condition		
Rape Myth Acceptance	.359	.377	<.0001
Gender (control variable)	.049	.183*	.476
Intercept	4.350		
F	17.900		
p	<.0001		
Adjusted R^2	.136		
n	215		

*p < .01; **p < .001.

Table 5-3

Standardized Regression Coefficients for Predicting Degree of Responsibility Attributed to Females for Sex in "Just Met" and "Dating" Conditions Using Control Variables

Predictors	Beta	r	p
	Just Met Condition		
Type of Pressure	-.630	-.640**	<.0001
Rape Myth Acceptance	.266	.279**	<.0001
Gender	-.045	.092	402
Intercept	51.432		
F	63.265		
p	<.0001		
Adjusted R^2	.466		
n	215		
	Dating Condition		
Type of Pressure	-.606	-.624**	<.0001
Rape Myth Acceptance	.341	.377**	<.0001
Gender	.019	.183*	.708
Intercept	43.785		
F	73.363		
p	<.0001		
Adjusted R^2	.504		
n	215		

Note: Standardized regression coefficients with negative correlations on type of pressure for forced sex in both stranger and dating conditions signify that more responsibility was attributed to the female when the man "insisted" that they have sex as opposed to when he "forced" her to have sex ("insists on sex" = 1; "forces sex" = 2). *p < .01; **p < .001.

Table 5-4

Significant Mean Difference Scores by Gender When Male Is Described as "Forcing" Sex in "Just Met" and "Dating" Conditions

Variable	Mean Difference Score: Male	Female	t	df	p
Man Forced Sex When Couple Had Just Met					
Flirted	23.22	16.63	-1.89	103	<.05
SD	18.37	17.37			
Changed Mind	25.49	16.38	-2.73	103	<.01
SD	17.76	16.43			
Man Forced Sex When Couple Had Dated					
Dined Out	15.61	7.22	-2.67	92	<.01
SD	18.18	13.50			
Petted	21.57	13.89	-2.16	103	<.05
SD	19.53	16.79			
Invited Date	16.76	6.85	-3.32	94	<.001
SD	17.08	13.19			
Went Braless	21.76	12.89	-2.45	103	<.01
SD	19.28	17.91			
Got Drunk	21.76	13.37	-2.40	103	<.01
SD	19.74	16.05			
Flirted	25.10	15.56	-2.56	103	<.01
SD	18.91	19.24			
Changed Mind	27.55	14.00	-3.47	103	<.001
SD	21.32	18.45			

Note: P-values are based on one-tailed probabilities. n=105

Table 5-5

Significant Mean Difference Scores by Gender across Mutual Sexual Attraction Variables as Justification for "Forcing" Sex

	Mean Difference Score				
Variable	Male	Female	t	df	p
	Mutual Sexual Attraction				
Gaze	1.71	1.26	-2.55	96	<.01
SD	.90	.81			
Caress	2.32	1.72	-2.38	96	<.05
SD	1.33	1.15			
Dance	2.71	1.86	-3.00	96	<.01
SD	1.54	1.26			
Bed	1.90	1.37	-2.63	72	<.01
SD	1.09	.84			
Clothes	2.92	2.12	-2.61	96	<.01
SD	1.57	1.45			

Note: P-value is based on one-tailed probabilities.
n=98

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A Longitudinal Study of Agenda Setting for the Issue of Environmental Pollution

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Introduction

The agenda-setting hypothesis, which has drawn increasing attention in the mass communications literature, posits a relationship between the relative emphasis given by the media to various topics and the degree of salience these topics have for the general public. Individuals note the amount of and distribution of media coverage among issues and this determines the salience of each issue for the individuals. According to the agenda-setting hypothesis, the media do not mirror public priorities as much as they influence them.

Most of the agenda-setting research to date follows the historical lead of examining the relationship between the results of quantitative content analysis of issues in the media and survey of the public's issue agenda. Variations of this design exist usually in the type and number of issues and the duration of development of the issue in the public agenda. Recent studies also have examined the relationship between the public policy agenda, the media agenda, and the public agenda. One often ignored, yet important, component for such studies is the real-world condition of the agenda item. The

real-world condition is the actual prominence of the specific issue in reality or the indicators of current conditions.

The Media Agenda and Real-World Conditions

Lippmann (1922) noted that the media shapes people's perceptions of things which they cannot experience directly. Those issues which individuals have little personal contact and for which they rely on the media as the primary, and sometimes, only source of information are termed unobtrusive.

Numerous researchers have observed that unobtrusive issues demonstrate a strong agenda-setting effect (Eyal, 1979; Zucker, 1978; Behr & Iyengar, 1985). The environment is one such issue. In fact, in a study using factor analysis to distinguish obtrusive issues from unobtrusive issues, Eyal (1979) found that the issue of the environment loaded strongest on the unobtrusive factor.

Zucker (1978) demonstrated that agenda setting took place for three unobtrusive issues--pollution, drug abuse, and the energy crisis--but did not occur with three obtrusive issues--the cost of living, unemployment, and crime. Agenda setting did not occur for the obtrusive issues because individuals can rely on real-world conditions and interpersonal discussion for information, while for

unobtrusive issues, the individuals only have information from the media to rely on.

Behr and Iyengar (1985) concluded that obtrusive issues--issues with tangible consequences for individuals, such as energy, unemployment, or inflation--not only affect the public by news media coverage, but also through real-world events and conditions. They observed that real-world conditions should be examined because they serve two purposes: first, they can help assess the sensitivity of the media agenda to current conditions and events. Second, they can help distinguish between the effects of news coverage and real-world conditions on the public agenda (p. 40). Behr and Iyengar (1985) also pointed out that:

> Moreover, since news coverage of issues is to a significant extent determined by actual conditions, analyses of media agenda setting that ignore real-world conditions will arrive at severely inflated estimates of media influence (p. 53).

McLeod, Becker, and Byrnes (1974, p. 141) observed that if a valid assessment of real-world conditions was possible, the relative similarity of the audience's perceived saliencies to external reality might serve as a control against which to evaluate the similarity of the public agenda to the media agenda.

Many agenda-setting studies have only analyzed the media agenda and the public agenda. By doing so, a researcher may discover a significant relationship but this relationship might be dependent on some exogenous variable (Erbring, Goldenberg, & Miller, 1980, p. 19). Also they discovered that real-world conditions may affect an individual's awareness of the media agenda. They proposed an audience-contingent effects model of media in which the public agenda is determined by the media agenda interacting with the audience's pre-existing sensitivities.

In this study, real-world conditions along with the public agenda and the media agenda were examined and this achieved two important ends. The first important end was to determine if the media agenda corresponds to real-world conditions. The second goal was to distinguish between the effects of news coverage and real-world conditions on the public agenda. The relationship between real-world and the public agenda serves as a control against the relationship between the public agenda and the media agenda.

The Environment and Public Opinion

Environmental problems became a leading item on the national agenda at the beginning of the 1970s. This concern and interest

manifested itself in April 1970 when hundreds of thousands participated in Earth Day events all over the country (Mitchell, 1980, p. 1). Media coverage of the environment has increased dramatically recently (Detjen, 1990) and so has public concern for environmental issues. In fact, the persistence and recent revival of public concern for environmental issues was termed a "second miracle" of public opinion by Dunlap and Scarce (1991, p. 652).

Hypothesis 1:

Zucker (1978) discovered a significant relationship between the media agenda and the public agenda for the issue of pollution. Eyal (1979) noted agenda-setting effects for unobtrusive issues and the issue of the environment loaded strongest on the unobtrusive factor. Funkhouser (1973a) proposed that the amount of media coverage of an issue, including coverage for the issue of the environment, strongly influences its visibility to the public. Based on these finding, it is hypothesized that:

> The media agenda and the public agenda for the issue of pollution will be related. That is, as coverage (in mean number of column inches) and prominence of the environment increases, the percent of responses which

name environmental pollution as the most important problem facing the country will also increase and vice versa.

Hypothesis 2:

Eaton (1989) found the media coverage of three nightly networks, five national newspapers, and three weekly national news magazines and the real-world conditions for the issue of pollution had a low correlation from 1968-1976. Babcock (1979) observed that Newsweek's coverage of air pollution, water pollution, soil pollution, and total pollution was uncorrelated respectively with the real-world conditions for air quality, water quality, soil quality, and mean environmental quality from 1969 to 1975. Other studies found a lack of correspondence between the real-world conditions and media coverage for the issue of pollution (Zucker, 1978; Funkhouser, 1973a). Based on these findings it is hypothesized that:

The relationship between the media agenda and real-world conditions for the issue of pollution will be unrelated.

Hypothesis 3:

Unobtrusive issues are those which do not have tangible consequences for individuals. Eyal (1979) found that the environment loaded strongest on the unobtrusive factor. Zucker (1978) noted that agenda setting did not occur with the unobtrusive issue of the environment because the individuals only have information from the media to rely on. Based on these findings it is hypothesized that:

> The relationship between the public agenda and real-world conditions for the issue of pollution will be unrelated.

Method

The methods of study was content analysis of the New York Times and secondary analysis of data including Gallup poll surveys, Environmental Quality, and the Characterization of Municipal Solid Waste in the United States. The content analysis assessed the media agenda, while the analysis of secondary sources provided the public agenda and real-world conditions respectively, for the issue of pollution.

Sample: In view of the support for print media's agenda-setting effect over television, the elite newspaper, the New York

Times was examined for this study. Massing (1984) found that this newspaper is one of the two most elite newspapers which influence television news.

The time period studied was 1970 to 1990, both years inclusive, because 1970 marks the year when the environmental movement gained widespread interest and appeal. The Times was examined three months before and after each Gallup poll because agenda setting implies a relationship between the media agenda and the public agenda. This three month time period was chosen because Stone (1975) concluded that the parameters for the agenda-setting effect extended from two to six months prior to the public agenda measure. Shoemaker, Wanta, and Leggett (1989) found two time periods in which media coverage of drug issues correlates with later public concern about drugs--one to two months and four to five months. Winter (1979), who tested several different time lags in order to identify the optimal timing for media content to influence the public agenda, reported the optimal timing to be about two to four months.

The New York Times Indexes was used for 1970 to 1990, inclusive. However, the Times was not published from August 10,

1978 to November 5, 1978, inclusive, because of a strike. Four categories in the Index were used: air pollution, environment, water pollution, and waste materials and disposal. For each year, a random number was chosen between one and nine, and this number determined the starting point of coding for each category.

For each category for each year, every tenth story was coded beginning with the story that was randomly chosen. In other words, a 10 percent sample of the four categories was coded. If the story was not about air, water, or waste pollution, then the next consecutive story was coded. Every tenth story was coded following this story. Jumped parts of a story were not treated as separate items.

All environmental stories were identified in this sample. Only news sections and editorials were analyzed. Hungerford and Lemert (1973, p. 477) defined environmental content as:

> ...dealing with man's positive, negative, or unknown influence upon, or relationship with, his environment. This influence or relationship could be past, present or future. This definition would include such varied topics as wildlife preservation, sewage disposal problems, reviews of environmental 'specials' on television, nuclear (thermal) pollution and citizen complaints about agricultural grass field burning.

Other researchers (Atwater, Salwen, & Anderson, 1985; Salwen, 1988) have defined environmental issues as those which are related to humanity's unintentional disruption of the ecological system. For purposes of this study, environmental content was defined as dealing with humanity's influence, whether positive or negative, on the environment. This included news items relating to humanity's unintentional disruption of the ecological system such as disposal of wastes, air quality, and water quality.

The coding unit was the paragraph, measured in column inches. That is, once an environmental story was located, each paragraph was coded into three topic categories including: 1) disposal of wastes, 2) air quality, and 3) water quality. Atwater, Salwen, and Anderson (1985) and Salwen (1988) noted that these categories were the most salient environmental issues in the mass media. Definitions are given below:

1. Disposal of Wastes: stories dealing with the storage, transport, recycling, and/or dumping of waste products.
2. Air Quality: articles dealing with such problems as smog, carbon monoxide, sulfur dioxide, and other

pollutants resulting from automobile exhaust, factory emissions, and other stationary sources; their effects on animal health and plant life; their cost to the economic system; and methods of control.

3. Water Quality: including references to coastal barrier protection, ocean dumping, offshore development, and/or wetlands.

Also, each story was coded for prominence. Prominence was operationally defined by placement, length of story, length of headline, if the headline was above the fold or not, and if the article had pictures or cartoons.

Reliability: Reliability checks were conducted after the original data collection was completed to determine the level of consistency in measurement. A 10 percent sub-sample was recoded to determine inter- and intra-coder reliabilities.

Table 1
Intracoder and intercoder reliability test results

Variable	Intracoder	Intercoder
Category	99.7%	100%
Prominence	97.6%	96.2%
Length	98.6%	92.8%

Public Agenda: Gallup poll survey data was used to determine the public agenda. Since Gallup poll data does not ask respondents about subissues of the environment, only the general issue of environmental pollution was analyzed.

Every Gallup poll was examined from 1970 to 1990 to determine if environmental pollution had been mentioned. This yielded a total of 66 MIP polls.

Real-World Conditions: Few efforts have been made to develop total environmental indices because of the complexity of the problem. One researcher has suggested that there are over 100 factors which can be ranked and grouped into 14 categories, for

which indices of environmental quality could be constructed (Pikul, 1974).

Current conditions for the issue of pollution were operationally defined by data from Environmental Quality, 1970 to 1991, inclusive, and Characterization of Municipal Solid Waste in the United States.

The data from Environmental Quality that was used to define the categories was:

1. Air Quality: total emissions, measured in millions of metric tons, of carbon monoxide, sulfur oxide, total suspended particulates (particles of smoke, dust, etc.), and nitrogen oxides added together. Index is based on the primary National Ambient Air Quality Standard that protects public health. Another index, the Pollution Standard Index, is based on NAAQS and uses all of the above air pollution factors in calculating its index.
2. Water Quality: oil polluting incidents reported in and around U.S. waters, measured in millions of metric tons.

Characterization of Municipal Solid Waste in the United States was used to define:

- Disposal of Wastes: gross waste generated as measured in million of metric tons.

The above categories were chosen because they are the most visible of the environmental problems. In addition to the above categories, an index for overall environmental quality, measured in millions of metric tons, was calculated for each year by summing the individual subindices above. Although air quality and water quality originally are measured in other units, they were converted to millions of metric tons.

Tests for Hypotheses: For investigating hypothesis 1, two Pearson r correlations were calculated: a correlation of the media agenda three months before the poll with the poll percentage and a correlation of the media agenda three months after the poll with the poll percentage. This allowed for pre- and post-comparisons. The media agenda was operationalized first by average length and then by average prominence score.

To investigate hypothesis 2, the real-world condition pollution indices for each year was correlated with the mean number of column inches devoted per year to environmental pollution. The

total pollution index and the three pollution subissues of water, air, and waste pollution each were correlated separately.

For investigating hypothesis 3, the percentage of Gallup poll responses per year which named environmental problems/pollution as the most important problem in America was correlated with the air pollution index, water pollution indicator, waste pollution indicator, and the pollution index.

Results

Distribution of Total Environmental Articles by Year:

A total of 1,954 environmental stories were coded for this study, a 10 percent sample of the total number of environmental stories listed in the Times Index under the categories of air pollution, environment, waste and disposal, and water pollution. The year 1970 had the largest number of articles with 161 stories and 1978 had the least with 53. Table 2 and Figure 1 illustrate the number of coded stories for the years 1970 to 1990, inclusive.

Table 2
Year versus Frequency, Average Length, and Average Prominence Score

Year	Frequency	Length	Prominence
1970	161	10.8	1.91
1971	134	12.3	1.92
1972	119	11.5	2.02
1973	121	11.2	1.97
1974	92	9.1	1.95
1975	102	10.7	1.76
1976	110	9.2	1.88
1977	102	12.5	2.13
1978	53	9.0	1.69
1979	78	10.8	1.69
1980	71	11.0	1.90
1981	88	12.2	2.37
1982	71	13.6	2.28
1983	93	15.3	2.63
1984	69	15.0	2.36
1985	62	16.6	2.55
1986	64	15.5	2.42
1987	75	15.6	2.57
1988	92	16.9	2.86
1989	104	18.0	3.18
1990	93	18.8	3.13

Distribution of Articles by Average Length and Prominence Score: Figure 2 illustrates average length of the environmental stories versus the years 1970 to 1990, inclusive. There is no

discernable trend from 1970 to 1977 because of fluctuations and the average length increases steadily from 1978 until 1990.

Hence, in general while the frequency of stories was decreasing over the years, the average length and average prominence score were increasing.

Figure 3 illustrates average prominence score of the articles versus the years 1970 to 1990, inclusive. The year 1989 had the greatest average prominence score with 3.134 and 1978 had the lowest with 1.689.

Distribution of Articles by Environmental Category: By environmental category, there were a total of 573 air pollution articles, 766 water pollution articles, and 615 waste and disposal articles.

Table 3
Distribution of articles by environmental category

Pollution Category	Total Number of Articles	Average Length Score	Average Prominence
Air	573	12.401	2.079
Water	766	12.476	2.184
Waste	615	14.022	2.474
Total	1954	12.966	2.245

Pollution Real-World Conditions by Year:

Figure 4 illustrates year versus air pollution measured in million metric tons. The amount of sulfur oxides, nitrogen oxides, carbon monoxide, and total suspended particulates for each year was summed to operationalize the air pollution index. The graph shows that since 1970, the amount of air pollution has steadily decreased.

Figure 5 illustrates the amount of oil, measured in million metric tons, spilled each year. The figure illustrates that there has been many fluctuations throughout the years and this is due to the fact that oil spills are usually caused by accidents.

Figure 6 illustrates the net amount of solid waste, measured in million metric tons, which was disposed of each year. Since 1970 there has been an overall increase in the amount of disposed net solid waste. Figure 7 show the total pollution index versus year. The total pollution index was calculated by summing air pollution, oil spills, and net solid waste for each year. This index is in millions of metric tons. Overall, the amount of pollution has steadily declined although there were a few years, such as 1976, 1977, and 1978, when the amount increased.

Hypothesis 1: This study tested the agenda-setting hypothesis by correlating the media agenda three months before each poll with the public poll percentage and also correlated the media agenda three months after each poll with the poll percentage. The media agenda was operationalized by average length and average prominence score. The agenda-setting hypothesis was supported because the correlation of the pre-poll media agenda with the poll percentage was statistically significant and stronger than the correlation of the post-poll media agenda with the poll percentage. Table 4 provides the correlations.

Table 4
Correlations between poll percentages and pre- and post-poll media agendas

Time Period	Avg. Length Pre-Poll	Avg. Length Post-Poll	Avg. Prom. Pre-Poll	Avg. Prom. Post-Poll
70-90	0.224*	0.165	0.240*	0.0456

* correlation significant at 0.1 level

Hypothesis 2: Hypothesis 2 postulated that there would be no correspondence between real-world conditions and the media agenda for the issue of pollution. Pearson r correlations were run for each subissue between the media agenda, operationalized by the subissue's average article length or average prominence score, and the subissue's real-world indicators for each year. Additionally, a correlation was run between the overall pollution index and the average length and average prominence score of all environmental stories for each year. Table 5 reports the correlations.

Table 5
Correlation between real-world indicators of pollution with their respective media agendas

Pollution Category	Prominence Correlation	Length Correlation
Total Pollution Index	-0.811*	-0.796*
Air	-0.702*	-0.650*
Water	-0.569*	-0.532**
Waste	0.675*	0.815*

*correlation significant at 0.01 alpha level
**correlation significant at 0.02 alpha level

Overall, all the real-world indicators had a statistically significant correlation with the media agenda, operationalized by either average length or average prominence score. All of the correlations were statistically significant and all were negative except the correlations for the waste and disposal pollution. The total pollution index, air pollution, and water pollution have all declined on the average through the 21 years while the average prominence score and average length of environmental articles have increased. Therefore, the correlations are negative. This indicates that despite a reduction in pollution, the media coverage

has increased. The fact that waste pollution has the only positive correlations is due to the fact that waste pollution has steadily increased and overall, so has the average length and average prominence scores.

Hypothesis 3: Hypothesis 3 postulated that there would be no relationship between real-world conditions and the public agenda for the issue of pollution. Table 6 illustrates the Pearson r correlations between the Gallup poll respondents naming environmental problems as the most important problems in America with real-world indicators of pollution.

Table 6
Percentage of Gallup respondents naming environmental problems as MIP correlated with real-world indicators of pollution

Pollution Category	Correlation
Air Index	0.344
Water	0.150
Waste	-0.276
Total Pollution Index	0.354

Overall, real-world indicators of pollution are statistically not significantly correlated with the Gallup poll percentage naming environmental problems as the MIP.

Conclusion

From 1970 to 1990, the agenda-setting hypothesis was supported for the issue of environmental pollution. Hence, the amount of media attention devoted to pollution determined the degree of public salience for this issue. This is consistent with previous findings by researchers that the environment is an unobtrusive issue, an issue which does not have tangible consequences for individuals. Therefore, the public has little personal contact with pollution and so they rely on the media for information. This was reinforced by this study's finding that real-world conditions and the public agenda for pollution were not correlated.

The media agenda and real-world conditions for pollution did have a statistically significant relationship. However, the correlations for the total pollution index, air pollution, and water pollution were negative. In other words, despite the overall reduction in pollution, media coverage on pollution has increased.

Probably this increase is partially due to greater amounts of government legislature aimed at reducing the amount of pollution. In addition, the number of special interest groups supporting environmental protection has increased.

However, a positive correlation was found between the media agenda and real-world conditions for the waste and disposal category. This result is not unexpected since the news media's renewed attention in the environment has been paralleled by an increase in the public's interest in recycling its waste. This is due to the fact that landfills are becoming scarce and recycling is becoming a crucial and controversial issue. Waste pollution is directly impacting the public.

Overall, by including real-world conditions, the sensitivity of the media agenda and public agenda to current conditions was assessed. As predicted, this study found that real-world conditions do not influence the media or public agendas directly.

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Figure 1

Year vs. Frequency

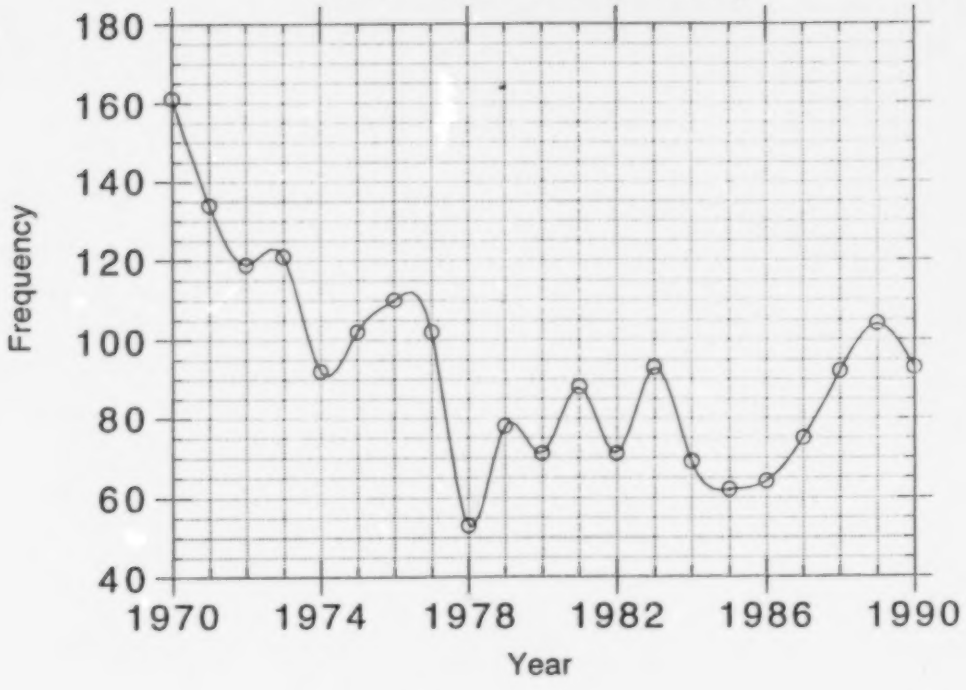


Figure 2

Year vs. Average Length

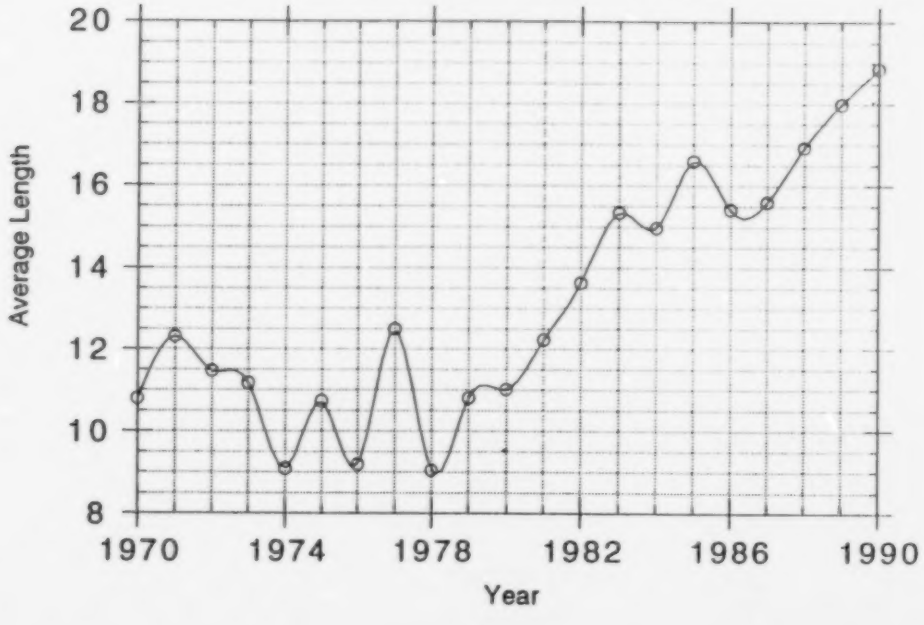


Figure 3

Year vs. Average Prominence Score

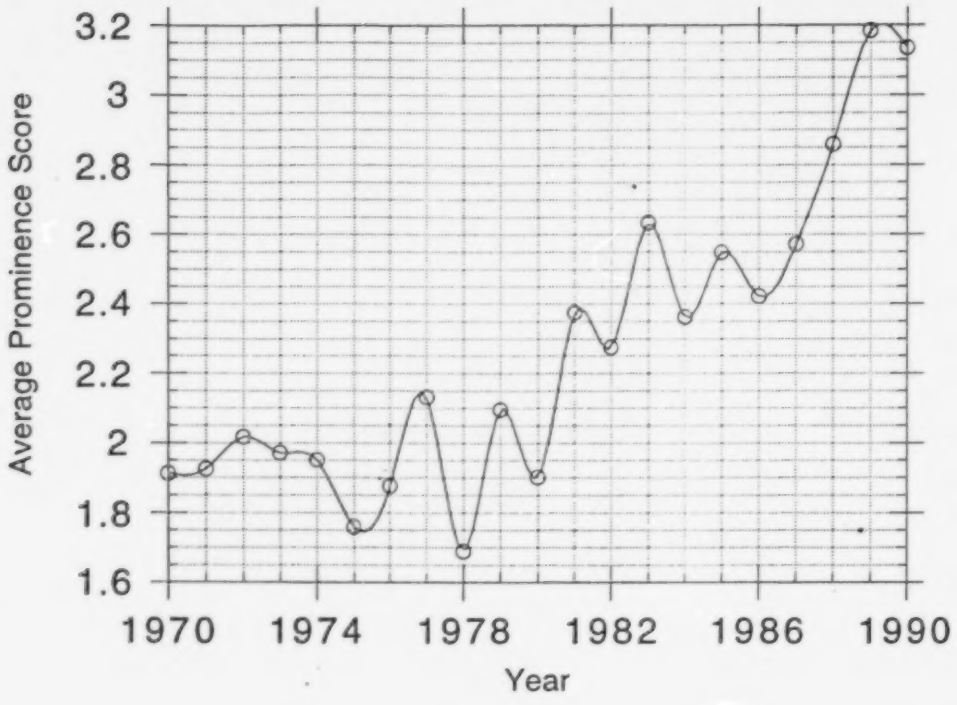


Figure 4

Year vs. Air Pollution

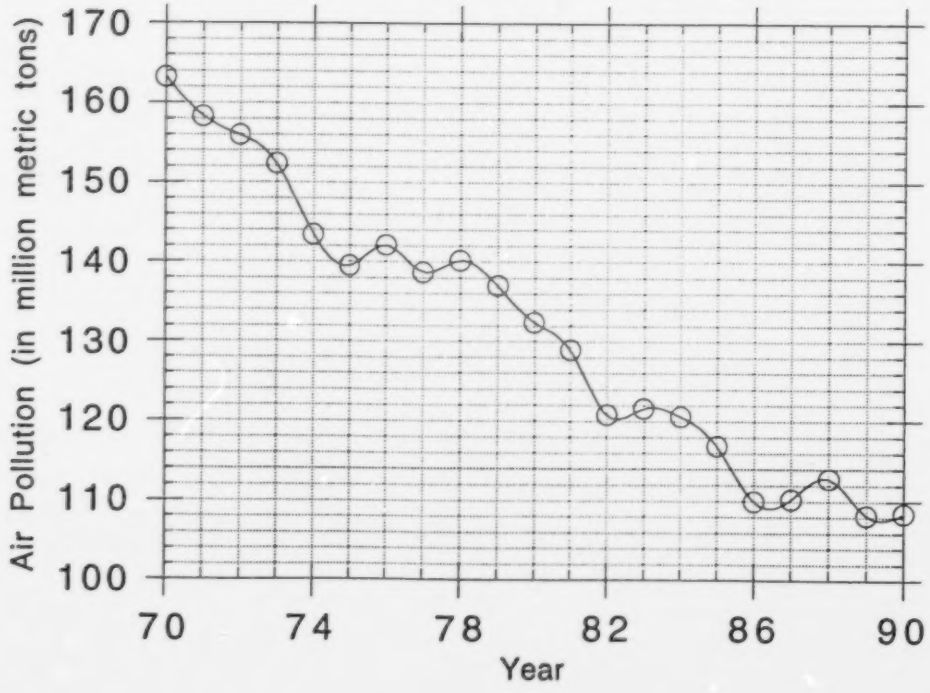


Figure 5
Year vs. Oil Spills

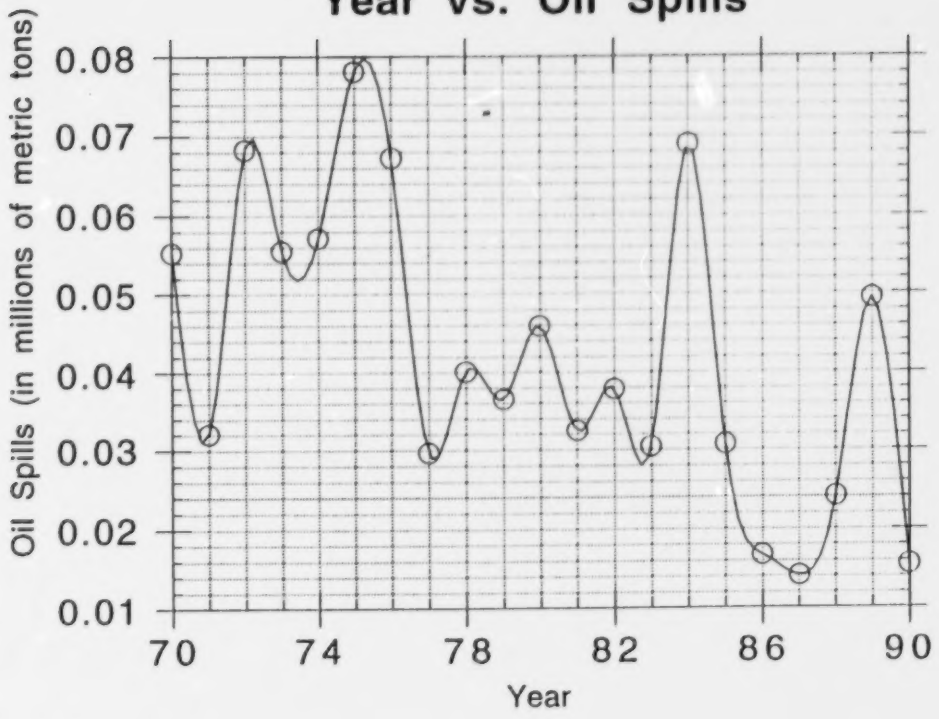


Figure 6
Year vs. Net Solid Waste

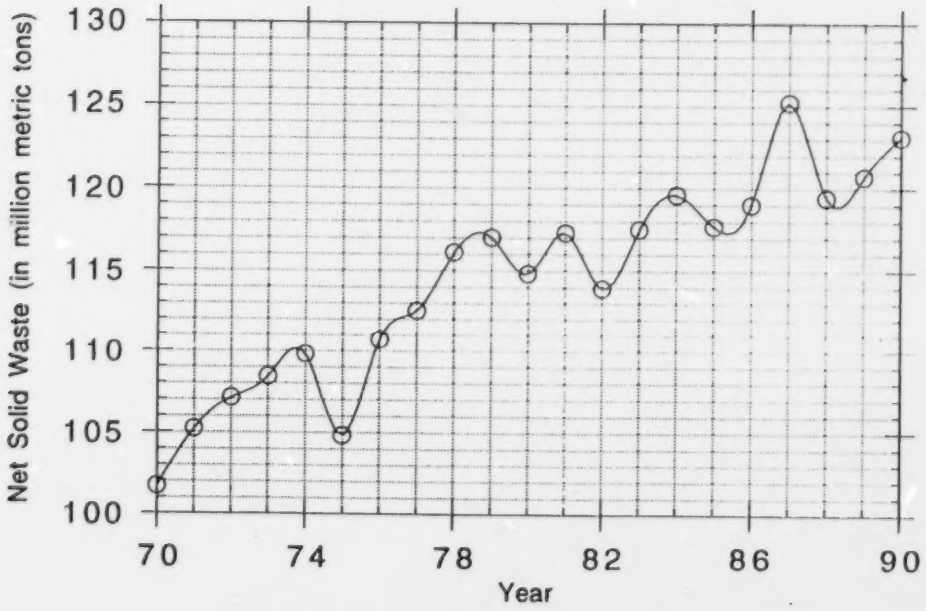
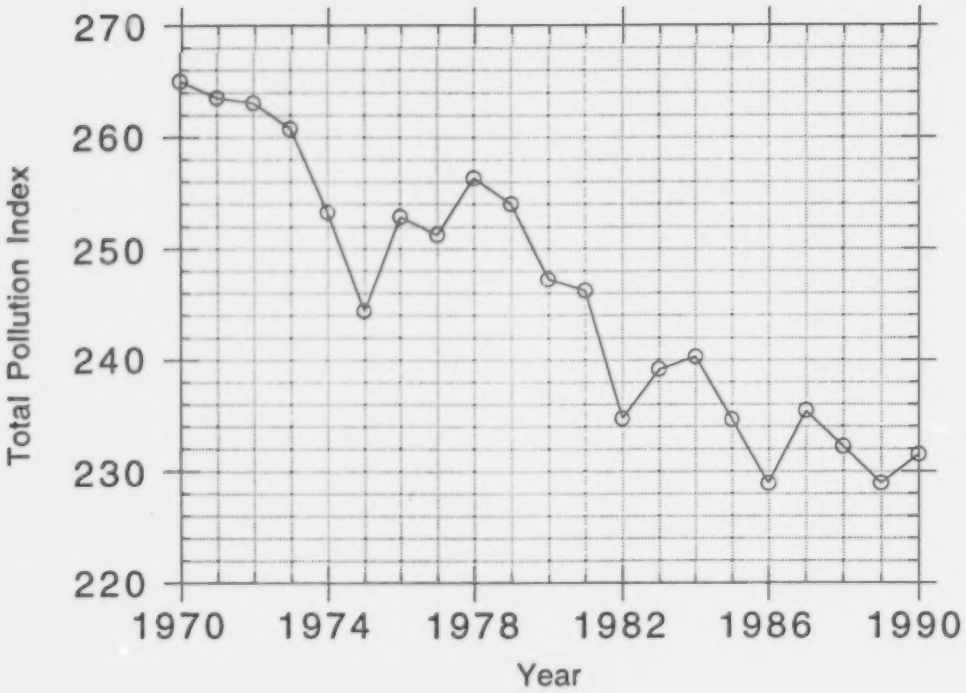


Figure 7

Year vs. Total Pollution



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A Cognitive Model of Communication Processes and Acceptance of People with AIDS

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Introduction

The present study has two primary objectives: to advance a cognitive model of communication processes and to empirically test the model by use of a complex social problem--the public's orientations toward people with AIDS. The general theoretical framework of the study is based on the advances made in media exposure studies, the elaboration likelihood model, situational theory and media effects especially belief and attitude formation and change resulting therefrom. The model, therefore, represents a pulling together of behavioral and cognitive communication constructs that were for the most part investigated and tested in isolation of each other except for a few successful examples.

Despite availability of documented evidence against casual contagion of AIDS (Sande, 1986), the low frequency of heterosexual transmission of HIV from antibody-positive hemophiliacs to their female sexual partners (Ragni et al., 1988), the nonexistence of transmission of HIV to the nonsexual household contacts of patients with AIDS or AIDS-related complex (Friedland et al., 1986), and the fact that the risk of health care professionals becoming infected with HIV in a needlestick injury is less than 1% (Smyser, Bryce & Joseph, 1990), negative attitudes toward HIV infected individuals prevail.

Negative attitudes toward persons with AIDS are embodied in their stigmatization. Goodwin and Roscoe

(1988) found that college students expressed misconceptions about and highly negative attitudes toward homosexual lifestyle. Similarly, negative attitudes toward persons with AIDS exist among members of the general public (National Center for Health Statistics, 1987), physicians (Lewis, Freeman & Corey, 1987), emergency medical service professionals (Smyser, Bryce & Joseph, 1990), nurses (Kelly, Lawrence, Hood, Smith & Cook, 1987c), nursing home employees (Sarvela & Moore, 1989), dental faculty members (Cohen & Grace, 1989), and medical students (Kelly, Lawrence, Smith, Hood & Cook, 1987b). Health care professionals' negative attitudes toward persons with AIDS bear significant implications on their professional responsibilities. Largely, these negative attitudes may interfere with the development of constructive relationships between a health care professional and his/her patient. Increased knowledge about AIDS, however, not only reduces stigmatization of AIDS patients but also enhances willingness to interact with them in situations with varying degrees of intimacy (Krupka & Vener, 1988).

Conceptual Model for the Study

The present study tentatively proposes the following conceptual model (See Figure 1) for an empirical test. The current formulation reflects a thorough integration of fragmented conceptual as well as

methodological previous attempts and its application to a social problem. Based on Figure 1, causal links between the dependent variable, acceptance of people with AIDS, and the independent variables (exposure and demographic characteristics) are mediated by involvement, information seeking, information processing, AIDS level of knowledge and empathic concern. The model, therefore, anticipates that:

> Acceptance of people with AIDS based on level of knowledge about the disease is contingent upon the perceived level of involvement evoked by the content of the message. If the perceived level of involvement is high, the individual will actively process the information available to him or her. Further, a highly involved individual will not only process the information about AIDS, but will also have a higher propensity to seeking more AIDS information in the future.
>
> Acceptance is also contingent on an individual's perceived level of empathic concern for people afflicted by the disease. A person's empathic concern therefore mediates the link between his/her AIDS knowledge and acceptance of AIDS patients as well as increases the likelihood of his/her AIDS information seeking.

The tentative acceptance of the present model, albeit based on what the current literature suggests, permits the possibility of further modifications of the model to

fit available data upon which empirical tests will be based.

Message Exposure

A review of communication literature reveals two problems with the construct of exposure. The problems signify the general concerns about the reliability and validity of the construct. Historically, exposure was not conceived of as a theoretical construct, but rather an observable media use behavior that could simply be operationalized by measuring the amount of time spent with the media, and often with some underlying meaning attached to what was measured such as motivation for media use and amount of knowledge gained. Such clear lack of theoretical conceptualization could have indeed led to unexplained theoretical disservice (Salomon & Cohen, 1978). Salomon and Cohen (1978), in an attempt to determine the construct validity of television viewing, explicated four conceptualizations of the construct exposure apparently with different connotations to the viewer. First, television can be conceived as a "social-situational factor" which provides individuals with opportunities to interact. Secondly, television can be regarded as the "transmission of a repertoire" where selection of content indicates decision making. Thirdly,

television can be a "source of content-messages" and viewing will entail "recall, comprehension or attitude change." Finally, television as a "language" could mean viewing is an act of decoding messages for the purpose of gaining knowledge (Salomon & Cohen, 1978, p. 266).

Conceptualization of media use behavior evolved within the last two decades to include the terminologies dependence and reliance, which have existed in the literature for more than half a century without clear theoretical and operational distinctions (McDonald, 1983). Ball-Rokeach and DeFleur's (1976) endeav[illegible] to conceptualize media dependency as a function of societal factors led to the subsequent operationalizations of the concept for empirical tests at the individual level (Miller & Reese, 1982; McLeod & McDonald, 1985) which in turn generated contradictory research findings.

Two relatively obscure conceptual formulations of media use behavior include media time budgeting and message discrimination. Time budgeting and its relations to media use was defined by changes in life-style dictated by economic forces (Kline, 1971) and motivational factors which direct purposive communication (Grunig, 1979). Despite the clarity of the difference, at the conceptual level in those studies, the operationalization of media use was based in both studies on time spent with the media. Clarke and Kline (1974), however, suggested the use of message discrimination, in lieu of media use, which they defined as how an individual "perceive(s) some symbols concerning a specified object" (Clarke & Kline, p. 229). Although the approach has been used in a few studies in the area of health communication, Salmon (1986a) justifiably indicated some serious methodological problems such as lack of comparability in units of analysis and the possible confusion between message discrimination and recall.

Furthermore, a common plague, in addition to the diversity of the aforementioned concepts of media use, is the conspicuous absence of establishing the construct validity of exposure, regardless of the terminology applied to name it and/or its operational measure, in the literature.

To date, exploring people's motivations to use the media and their consequences remain the most researched topics in communication studies (Grunig, 1979). Identifying those reasons were undertaken by some theoretical formulations that added significantly to what researchers currently know about media use behaviors and their effects as well as generated perplexities as to which of the often confusing and contradicting findings lack accuracy. For instance, in

the uses and gratifications tradition, though it largely harmonizes with the notion that a set of motivating factors determines people's orientations toward mass media use (Blumler & Katz, 1974), the types of gratifications obtained therefrom remain unsettled (e. g., Towers, 1985; Kippax & Murray, 1980). Nevertheless, communication scholars continued to add to the repertoire of exposure theories including, for instance, Carter's (1990a, 1990b) theory of behavioral molecule, Grunig's (1982) situational theory, the activation model of information exposure (Donohew, Palmgreen & Duncan, 1980), and Zillmann's (1988) mood management theory.

A generally problematic aspect of most of those conceptualizations is the narrowness of their explanatory scope. For instance, the uses and gratifications, situational theory (Grunig, 1982), and the hypothesis of selective exposure (Sears & Freedman, 1977) focus on communicative behaviors of the individual. The activation model and mood management model, on the other hand, explain, solely, the relations between exposure and entertaining content. Further, Grunig's (1979) attempt to formulate a theory of media use based on Carter's (1973) conceptualization of communication as behavior, was beclouded by the erroneous categorization of instrumental and noninstrumental uses of the media. According to Grunig (1979), use of the media to "pass time, obtain vicarious social contact, (entertain), or find out what is happening in the world" (Grunig, p. 249) was not instrumental is hardly accurate.

A rather comprehensive theory, which can be used at the individual and societal levels, was advanced by Carter (1990a, 1990b). Behavioral molecule theory proposes that behavior is composed of several identifiable constituents. Further, communication behavior is one of the several elements an individual utilizes on a daily basis to provide meaningful guidance throughout one's life. Perhaps the significance of the theory lies in the importance attributed to the role of the concept of exposure. In Carter's behavioral molecule theory, both observing (exposure) and moving (behavior) are as much processes as are the relations among elements of any physical, chemical, or biological structure. Further, it is indicative of the purposive nature of communication behavior.

However, application of Carter's theory to mass communication requires the specification of a multi-observing sequence. The observation (content) is produced by media personnel to be consumed by members of the public who then use it to enhance their observing possibilities. Therefore, communicating

assumes the three roles of producing, exchanging and restoring of observations (Carter, 1990b).

Based on the theoretical formulation of the behavioral molecule, the present study conceptualizes exposure as an observing mechanism to enhance the audience's cognizing ability and hence direct its future behavior. Carter's theory of behavioral molecule and effects, however, failed to operationalize the concept of observing. Salomon and Cohen (1978) argued for four types of the construct validity of television viewing. Of particular interest to this study is the notion that the audience needs to perceive of the media as transmitters of particular content. Further, exposure as perceptions about messages not only "entails factors such as attention (and) motivation" (p. 268), but also implies the assumption that content can affect cognitions, attitudes and behaviors. The construct validity of exposure as perceptions of messages, however, can not be established by measuring amount of time spent with the media. Atwood (1991) used the audience's perceptions of the amount of information about an issue obtained from mass media as a measure of message exposure. The present study will adopt Atwood's (1991) approach due to its compatibility with Salomon and Cohen's (1978) notion of exposure as perceptions of messages.

Demographic Characteristics

The second category of exogenous variables in the model is the block represented by the demographic characteristics (See Figure 1). The elaboration likelihood model (Petty, Cacioppo & Kasmer, 1988; Petty & Cacioppo,1981) posits that an individual's ability, largely represented by an individual's education, and motivation increase his or her likelihood to thoughtfully consider the arguments of messages he/she encounters in the media via the central route. A plethora of studies found positive correlations between the level of education and information acquisition (McLeod & McDonald, 1985; Kline, 1971). Reports on AIDS diagnosis and mortality indicate that women are more easily infected and minorities are proportionally more afflicted by the disease than the rest of the population (Center for Disease Control, 1991). It is therefore reasonable to propose that the more educated, women and minorities are more likely to perceive higher levels of involvement when they encounter messages about AIDS than are other individuals. Further, educated women and minorities are more likely to process those messages than are other persons.

Issue Involvement, Issue Information Seeking and Processing

Under the rubric of involvement, however, the constructs of involvement as well as their operationalizations acquired further meanings and measurements almost every decade since the concept was used by Sherif and associates (Sherif & Cantril, 1947; Sherif & Hovland, 1961). Consequently, different research traditions within a discipline and across disciplines often had contradicting findings (Salmon, 1986b; Chaffee & Roser, 1986; Perse, 1990; Roser, 1990).

The concept has not only systematically evolved to encompass a variety of meanings and measurements (Salmon, 1986b), but also endured some confusing attempts made by several scholars to reconcile the sometimes seemingly factious theoretical developments and empirical findings. For instance, Roser (1990) argued that involvement is composed of several constructs which could be atomized into clearly defined constituents according to their probable differential effects. Consequently she indicated that measures of involvement such as interest, salience, and relevance could have different effects on the cognitive and affective dimensions of the concept. Indeed, her empirical tests confirmed statistically significant links between attention and knowledge as well as relevance and attitudes. However, despite Grunig and Childers' (1988) caution that constructs such as salience, interest, and relevance are aroused by involvement rather than being involvement themselves, the same line of reasoning followed by Roser (1990) is often encountered in the literature (e. g., Auter & Davis, 1991; Flora & Maibach, 1990).

Communication literature also discloses clear misunderstanding of both the conceptual and operational dimensions of involvement. For instance, Perse (1989) differentiates between four categories of involvement as follows:

> 1) intentionality: sense of anticipation before exposure;
> 2) attention: focused cognitive effort directed toward television content;
> 3) elaboration: thinking about television content; and
> 4) engaging in distracting behaviors while viewing as indication of less involvement (p. 7)

Again Grunig and Childers' (1988) critique applies to attention which is more likely to be a measure of information processing than involvement. The constructs of intentionality and elaboration are more congenial with the nature of information seeking and processing respectively than involvement per se

(Grunig & Childers, 1988; Atkin, 1973; Petty & Cacioppo, 1981; Petty, Cacioppo & Kasmer, 1988). Although engaging in distracting behaviors while viewing indicates a lack of involvement, it is conceivable that an individual can be sitting in front of a television set without paying attention to the medium let alone getting involved with its content.

Despite the aforementioned critique, Salmon (1986b) justifiably indicates that the seemingly contradicting findings could simply be explained by the fact that the differences in the various research traditions using the concept of involvement actually stemmed from "the intellectual heritage each research adopts" (Salmon, 1986b, p. 260). For instance, there certainly are differences among the levels of involvement addressed by the social judgment theory, the elaboration likelihood model, and the hierarchy of effects. While ego-involvement is "analogous to extremity of attitudes," involvement in the elaboration likelihood model indicate an issue of future consequences for the subjects. Although both types of involvement may appear similar, Grunig and Childers (1988) indicated that a major difference lies in their predictions of the effects of persuasive messages. While ego-involvement reduces the chances for persuasion, issue/personal involvement enhances the likelihood of persuasion. Further, the hierarchy of effects and the elaboration likelihood models differ on their methodologies.

Conceptually, however, "involvement always refers to characteristics of an individual or of a stimulus or of an interaction" (Salmon, 1986b, p. 256). This characterization of the concept led Salmon to suggest a typology of involvement based on a continuum with emphases on the individual at one pole and the stimulus on the other extreme, while the points between them reflect various degrees of interaction between a person and the relevant stimulus. Grunig and Childers (1988) argued that Salmon's typology was superfluous. They contended the individual and stimulus sides of the continuum were analogous to Sherif's ego-involvement and the elaboration likelihood model types of involvement respectively. Calling ego-involvement internal and issue/personal involvement external, they argued both play fundamental roles in explaining communication behaviors and their respective consequences. However, they failed to provide compelling empirical evidence for the causal links in their model. Nonetheless, the reader ought to be cautioned about the serious analytical flaws in their statistical model which could very well explain the lack of significant results. For instance, some of the betas reported in their results were greater than unity.

External involvement seems to be of higher interest to this study due to its theoretical relevance to the present study, and the adequacy of its measures. Petty and Cacioppo's (1979) definition of issue and/or personal involvement was based on definitions provided by other scholars including the Sherif group, and Apsler and Sears such that it reflects future consequences for the individual. Although Petty and Cacioppo's (1979) theoretical definition of issue involvement was borrowed for this study, Grunig and Chi[illegible]ers' (1988) operationalization of the construct is more appropriate for study based on survey data.

Greenwald and Leavitt (1984) argue that there are four levels of audience involvement which differ in their degree of "attentional capacity" allocated for the purpose of processing incoming symbolic stimuli. Preattention level of involvement uses the least "attentional capacity." Focal attention uses a moderate degree to concentrate on a single source of information and decodes the message into its primary elements. Comprehension utilizes a greater "attentional capacity" to form a "propositional representation" of the information provided by the symbolic message. Elaboration, which uses the highest level of capacity, provides for the integration of the information into a previously held knowledge base.

This study adopts Greenwald and Leavitt's (1984) analysis of levels of involvement and assumes that an encounter with a symbolic stimulus will initially activate a "preattentional capacity" of an audience. However, a stimulus which implies greater future consequences for the audience generates a higher level of involvement and consequently a higher level of "attentional capacity," such as focal and comprehension, needed to process the incoming information. Therefore, the higher the level of issue involvement, the higher the level of "attentional capacity" used to process information about that issue and subsequently the greater the level of knowledge about the issue.

It has been indicated earlier that the significance of the concept of involvement stems from its connections to information seeking and processing of a relevant issue. Information seeking has been conceptualized, in communication literature, in variant formulations. For instance, the notion of need for information (Atkin, 1973) and cognition (Cacioppo & Petty, 1982; Cacioppo, Petty & Kao, 1984), uses and gratifications approach (Blumler & Katz, 1974), social conflict (Tichenor, Rodenkirchen, Olien & Donohue, 1973), and selective exposure (Stempel, 1961) were evoked to explicate an

individual's use of information sources for utilitarian ends.

In this study, the construct of issue information seeking is defined as an active search for facts about an issue which the individual has been involved with due to its high future consequences for the individual. Based on the above discussion, it is congenial to hypothesize a positive relationship between the level of issue involvement and information seeking such that the greater the amount of perceived future consequences, the greater the likelihood of issue information seeking.

Level of involvement is also positively related to the construct of issue information processing. Although issue information processing is the most problematic of all communication variables to dissect, social and cognitive psychologists constructed variants of maps which explain the dynamics of what they presumed ought to occur in the "black box" during communication behaviors. One version was introduced by Crockett (1988) which is, more or less, representative of most of what is known nowadays.

Variants of those generalized speculations about cognitive activities in information processing were incorporated, sometimes with more elaborate specifications, in several models of information processing. Grunig and Childers' (1988) conceptualization, for instance, differentiates between breadth and depth of information processing. Level of involvement is assumed to influence breadth by increasing the number of elaborations in which the brain is engaged during communication behaviors while impacting depth by reorganizing the characterizations of the schemas generated from such elaborations. Similar generalized results were also found by other scholars (Schneider & Shiffrin,1977; Rao & Farley, 1987).

Of particular relevance to the present study is the type of mental activities described by Rao and Farley's (1987) analysis of the level of information processing in which they contended that cues from the environment are normally added to schemas in the short-term memory. The absence of relevant schemas in the short-term memory will consequently lead to extensive search in the long-term memory where diverse "cues are combined, compared, evaluated, restructured, and compared again in an iterative process" (Rao & Farley, 1987, p. 288). Therefore, the number of schemas involved in those manipulations determine the level of information processing.

Measurements of information processing differ with the type of methodology applied in the various

investigations dealing with the construct. In experimental settings, measures of processing were taken through behavioral, physiological and introspective responses (Chaffee & Schleuder, 1986; Reeves & Thorson, 1986; Petty & Cacioppo, 1979; Petty, Cacioppo & Goldman, 1981). In survey research, however, introspective responses as measures of information processing are the norm (Chaffee & Schleuder, 1986).

Introspective responses of information processing also vary. Although from an empirical standpoint a measure of a construct is based on its observable traits (Carmines & Zeller, 1979), the characteristics of information processing are unknown even to the respondents themselves. However, several researchers used attention consistently, and with some impressive results, to measure this illusive mental behavior (Grunig & Childers, 1988; Grunig, 1982; Reeves & Thorson, 1986). Celsi and Olson (1988), Chaffee and Schleuder (1986), and McLeod and McDonald (1985) found that when measures of exposure were accompanied by measures of attention, the prediction models were significantly improved.

The present study adapts McLeod and McDonald's (1985) measures of attention as empirical indicators of issue information processing mainly because attention is a viable trait of mental activities and has been found to correlate with both exposure and level of knowledge. Grunig and Childers (1988) also used perceived amount of attention to AIDS as a measure of information processing. However, they failed to find a significant correlation between information seeking and information processing perhaps because they used what seemed to be measures of recall of sources of information as empirical indicators of information seeking rather than active search for information about AIDS.

Based on the above discussions, it is proposed that level of issue involvement is positively related to increased mental activity. Because level of issue involvement is positively related to both issue information seeking and processing, it is reasonable to postulate a positive relationship between issue information seeking and processing. Therefore, it is plausible to hypothesize that level of issue involvement affects issue information processing both directly and through issue information seeking.

Empathy and Acceptance of People with AIDS

It has been pointed out that the dependent variable of this study, acceptance of people with AIDS, is mediated by AIDS level of knowledge and empathic

concern about people with AIDS. The use of the construct of empathic concern is partly in response to some scholars' skepticism about the often suggested direct link between knowledge and attitudes (Krugman, 1965, 1970; Festinger,1957; Festinger & Carlsmith, 1959), and partly due to some characteristics of the topic chosen to test the present model--a highly dramatic health problem with social implications. Empirical evidence to the possible connection between illness and feelings of compassion was provided by Piliavin, Rodin and Piliavin (1969). In a field experiment they found that an apparently ill person was more likely to receive aid than was one who appeared to be drunk regardless of race.

The level of involvement and "attentional capacity" invoked by symbolic stimuli influence the type and magnitude of cognitive effects. Greenwald and Leavitt (1984) argued that while preattention level of involvement produces little and short-lived effects, the other three levels of involvement produce increasingly greater and more persistent effects. At the focal attentional level of involvement, familiar stimuli generate greater awareness while novel stimuli produce memory traces. At the comprehension level, a stimulus establishes "traces at the propositional level of representation" (p. 588) though the traces are harder to access in the future without elaboration, which is the highest level of involvement. Elaboration, however, generates traces at the conceptual level. Based on the above considerations the present study proposes a positive correlation between a high level of knowledge about an issue and processing greater amount of information about that issue.

Deutsch and Madle (1975) conducted a review of literature on empathy and concluded that the concept has undergone some major conceptual diversifications since its inception in the first decade of this century and seemed to have found refuge, finally, in a cognitive perspective to enhance its future theoretical development. They maintained that its definitions varied from "feeling together with" someone, "observer's understanding of an individual's affect," "'emotional linkage' between mother" and child, sharing "the feelings of another," to putting oneself in a person's place--role taking (pp. 268-70). Their analysis of empirical support of those various conceptualizations indicated that there was a general "agreement that an empathic response requires self-other differentiation and that it is a response to another's affective state either alone or in a situation" (Deutsch & Madle, pp. 271-72).

Theoretically, they endorsed the cognitive theory of empathy advanced by Piaget which was based on the concepts of egocentrism and decentration. Both phenomena were assumed to develop with a child's perpetual cognitive growth. Initially, a child's cognitive ability can only focus his attention on a single aspect of an object but as he develops cognitively so does his ability to change his concentration from one attribute of an object to another. With this skill also comes the child's ability of self-other transfer which is essentially a role-taking power. Role-taking, therefore, entails knowledge of people and the situations in which they interact as well as knowledge of self in relevant situations. Consequently, empathy is positively correlated with both cognitive development and social interactions (Deutsch & Madle, 1975).

Recently, empathy was viewed as a concept that encompasses at least four distinct constructs of "social functioning, self-esteem, emotionality, and sensitivity to others" (Davis, 1983). Further, each construct is orthogonal to the other. Of particular interest to this study is empathic concern (sensitivity to other) which was defined by Davis (1980) as "a tendency for the (individual) to experience feelings of warmth, compassion and concern for others undergoing negative experiences" (Davis, p. 4).

Deutsch and Madle (1975) suggested the cognitive perspective was a potential theoretical basis for testing an array of independent and dependent variables. In fact, such efforts have already been undertaken by some scholars interested in the relations between empathic concern and altruistic behavior among other issues. Although some scholars have argued a dichotomous distinction between cognitive and emotional facets of empathy (Davis, Hull, Young & Warren, 1987), Coke, Batson and McDavis (1978) developed a model arguing the influence of empathy on helping behavior due to altruistic motives in which both cognitive and emotional dimensions actually interact rather than compete for different types of influence. The model states that "(a) Taking the perspective of a person in need tends to increase one's empathic emotional response; (b) empathic emotion in turn increases motivation to see that person's need reduced" (Coke, Batson & McDavis, p. 753). Therefore, the likelihood of helping will be increased since help is the most possible method of the other's need reduction.

Some studies have argued that help provided due to empathic concern was altruistic (Toi & Batson, 1982; Fultz, Batson, Fortenbach, McCarthy, & Varney, 1986), while other studies have indicated that help was motivated by egoistic forces (Batson, Bolen, Gross &

Neuringer-Benefiel, 1986). Regardless, the evidence was consistent on the simple fact that empathic concern indeed mediates helping behavior. Further, empathic concern was found to be related to providing help to individuals experiencing pain and pleasure (Krebs, 1975) as well as to illness (Piliavin, Rodin & Piliavin, 1969).

In this study, however, altruistic motives are limited to concerns for the medical, legal, and social rights of people with AIDS as well as positive attitude toward them. Based on Coke, Batson and McDavis' (1978) model and the empirical support of studies on empathic concern and altruism, the present study hypothesizes a positive correlation between AIDS level of knowledge and empathic concern as well as empathic concern and acceptance of people with AIDS. Further, it is reasonable to propose a positive relationship between empathic concern and issue information seeking.

Hypothesis of the Study

H_1: Acceptance of people with AIDS will be a function of (a) exposure to messages about AIDS and demographic characteristics, (b) level of involvement with the messages evoked thereof, (c) information seeking of messages about AIDS, (d) information processing of messages about AIDS, (e) the level of knowledge about AIDS, and (f) the level of empathic concern about people with AIDS.

Method

The Sample

The sample of the study was composed of adults from Jackson county in Southern Illinois who voluntarily participated in a telephone survey. The interviews were conducted by trained undergraduate and graduate student volunteers as well as paid undergraduate students. The telephone numbers were selected from local exchanges utilizing random digit dialing techniques. The interviews, which lasted about 10 minutes each, were conducted from April 20 to May 6 1992. There were 457 useable questionnaires with a 62% success rate.

Among the respondents, 282 (61.7%) were from a university community, 61 (13.5%) were from two small rural towns, 101 (22.3%) were from adjacent rural areas and 9 (2.0%) were from undeclared areas. Two hundred and fifty three (55.4%) of those in the sample were females while males accounted for 44.2%. The respondents' ages ranged between 18 and 84 years old, with an average age of 36 and a mode of 22. The respondents seemed to have attained reasonable educational standards with 48.1% having some college,

12.3% completed college, 4.6% some graduate school, 12% completed a masters degree, 4.6% attained a Ph.D. and only 16.6% had a high school diploma or less. Means and standard deviations of most of the variables of the proposed and modified models are presented in Table 1. LISREL 7 was used to fit the proposed model to the empirical data collected through the telephone interviews.

Operationalization of the Constructs

Operational definitions of the constructs, followed by their empirical indicators. Measurements of the constructs of the theoretical formulation were largely adapted from previously established operationalizations and scales. Issue information seeking was coded Yes(2) and No(1), while knowledge questions were coded True(2) and False(1). For the measured indicators of the constructs of message exposure, issue involvement and issue information processing scales, there are five possible options: A great deal (5), Quite a bit (4), Some (3), A little (2) and Nothing at all (1). The measured indicators of the constructs of empathic concern and acceptance of people with AIDS are also acquired on a five point scale: Strongly agree (5) and Strongly disagree (1).

Message exposure: an individual's perceptions of the amount of information regarding AIDS in the media. The items which operationalize exposure were adapted from Atwood (1991): (a) How much have you read about AIDS within the last month or so in newspapers? (b) How much have you heard about AIDS within the last month or so from television? (c) How much have you heard about AIDS within the last month or so from radio? and (d) How much have you read about AIDS within the last month or so in magazines?

Demographic Characteristics: The degree acquired due to formal education was recorded for the education variable. Ethnic group, defined as an individual's race, was coded as African American (1), European American (2), Hispanic American (3), Native American (4), Asian American (5), Other American (6), Foreign (7), Don't Know (8), and Refusal (9): (a) How many years of schooling have you completed? (b) What is your ethnic group? and (c) Gender of respondent was recorded by the interviewer.

Issue involvement: the perceived future consequences of AIDS to the individual and a close person as well as economic, social, political and cultural consequences for an individual. The measured indicators for issue involvement for the study were borrowed from Grunig and Childers (1988). However,

items (c) through (f) were added to the original two items developed by Grunig and Childers: (a) To what extent do you believe AIDS will affect you personally either now or in the near future? (b) To what extent do you believe AIDS will affect someone close to you either now or in the near future? (c) How strongly will AIDS affect you economically, by increasing health care and social costs? (d) How strongly will AIDS affect you socially, by infecting members of your family? (e) How strongly will AIDS affect you politically, by making AIDS a campaign issue? and (f) How strongly will AIDS affect you culturally, by premature death of so many young people?

Items (c), (d), (e), and (f) will be combined into a single index by summing their values and consequently providing a general measure of issue involvement.

Issue information seeking: the active search for facts about AIDS engaged in by the individual. Items (a) and (b) of the measured indicators for information seeking for the study were adapted from Atwood (1991) and the other items were adapted from a questionnaire developed by the CDC (1991):

Tell me which of these things you have done to get information about AIDS? (a) Sent off for information about AIDS? (b) Attended a lecture or talk on AIDS? (c) Started a discussion about AIDS with family members, friends, or co-workers? (d) Talked to a health professional about AIDS? and (e) Called one of the AIDS hotline numbers for information about AIDS?

All measured indicators will be combined into a single index of AIDS information seeking.

Issue information processing: amount of attention devoted to AIDS messages over the media. The measured indicators for the construct of issue information processing were borrowed from McLeod and McDonald (1985):

Suppose you come across a story or something about AIDS tomorrow, how much attention would you pay to the story about AIDS? (a) Newspaper stories about AIDS? (b) Magazine stories about AIDS? (c) Print ads about AIDS? (d) Television news stories about AIDS? (e) Public service announcements about AIDS on TV? and (f) Radio commercials about AIDS?

Measured indicators (a) and (b) will be combined into a single index by summing their values. Further, measured indicators (c), (e) and (f) will be combined into a single index by summing their values. Consequently, issue information processing will be measured by a total of three indicators representing issue information processing of print materials, issue

information processing of television news stories and issue information processing of ads and commercials.

Issue level of knowledge: the number of correct responses to questions about AIDS. The measured indicators for information acquisition were borrowed from a questionnaire developed by CDC (1991) and Elliott et al. (1991).

Tell me if you believe the statements are true (2), false (1), or if you are not sure (9). One can catch AIDS by (a) Kissing someone with AIDS, (b) Eating food prepared by someone with AIDS, (c) Being sneezed on by someone with AIDS, (d) Using a restroom used by someone with AIDS, (e) Receiving dental care from someone with AIDS, and (f) Getting a blood transfusion.

Can you tell me what the following abbreviations stand for or can you describe what they mean? (a) HIV, (b) ARC, (b) AIDS, and (d) AZT.

A correct response is given on point and a false response is given a zero. All correct responses will be combined into a single index by summing their values. The index is therefore a measure of level of knowledge about AIDS.

Empathic concern: an individual's perceptions of feelings of warmth and compassion for people with AIDS. The operationalization of empathic concern for the present study was adapted from Davis (1980).

Please tell me whether you strongly agree, agree, are neutral, disagree, or strongly disagree with each of these statements: (a) When I see people with AIDS on TV or movies, I feel compassion for them, (b) I feel softhearted for people who get AIDS accidentally like during an operation, and (c) I feel concerned for people with AIDS in high risk groups such as prostitutes, homosexuals, IV drug users, etc.

Acceptance of people with AIDS: perceived concern for the medical, legal and social rights of people with AIDS and positive attitude toward them. The items used in measuring this construct were adapted from Bouton et al. (1987), Singer et al. (1987) and Elliott et al. (1991).

Please tell me whether you strongly agree, agree, are neutral, disagree, or strongly disagree with each of these statements: (a) I wouldn't mind being in the same room with a person who has AIDS, (positive attitude toward people with AIDS), (b) A centralized file containing the names of all people with AIDS should be created (a violation of legal right), (c) I would be afraid to hug a friend who has AIDS (negative attitude toward people with AIDS), (d) Children with AIDS should be allowed to play with other children (social right), and (e) I wouldn't mind if a half-way house for the treatment of AIDS patients was to move into my neighborhood (medical right).

After reverse coding items (b) and (c), the measured indicators (a) and (c) will be combined into a single index by summing their values to create one indicator for attitude toward people with AIDS.

Results

It has been hypothesized that acceptance of people with AIDS is a function of AIDS message exposure and demographic characteristics, AIDS involvement, AIDS information seeking, AIDS information processing, AIDS level of knowledge and empathic concern for people with AIDS. The results of testing the proposed model using empirical data are presented in this section.

Path Analysis of Proposed Model

It has been pointed out that the latent variable of demographic characteristics will be measured by the three indicators of education, ethnicity and gender. However, several runs of the proposed model exhibited problems of nonconvergence and singularity of matrix to be analyzed. A confirmatory factor analysis of all the variables of the proposed model was undertaken to locate the sources of problems. Gender was excluded from the model because of its poor loading in the construct of demographic characteristics.

Assessing the adequacy of the proposed and modified models will be done by examining the results of measures of overall fit, detailed assessment of the fit and examination of the solution.

The empirical data fit the proposed model relatively well. Despite the fact that the chi-square is highly significant, the model represents a relatively adequate fit to the data. The chi-square test assesses the fit between Σ and S and hence provides an omnibus test of the model and the estimates of its free coefficients (Hayduk,1987). As Chaffee and Roser (1986) point out, however, with large sample sizes, obtaining nonsignificant chi-squares are 'almost impossible. Some researchers suggest that a ratio of chi-square to degrees of freedom of 5 or less is an indication of an acceptable fit (Hayduk, 1987; Chaffee and Roser, 1986; Grunig and Childers, 1988; Joreskog and Sorbom, 1989). For the proposed model the ratio of chi-square to degrees of freedom is 2.539. More will be said about sample sizes and statistical tests later.

A second measure of overall fit is termed the goodness-of-fit index. The proposed model provided a goodness-of-fit index of 0.913 and an adjusted goodness-of-fit, which is the former index adjusted for the degrees of freedom of the model, of 0.888. Although the distribution of the goodness-of-fit index is not known,

values in the .90-.95 range are considered adequate fits while values greater than .95 are considered excellent (Chaffee and Roser, 1986).

The third measure of overall fit is the root mean square residual which is the average of the fitted residuals. The elements of the fitted residuals are the differences between sample covariance and implied covariance (S - Σ) (Joreskog and Sorbom, 1989). The general rule of thumb is that a root mean square residual of less than .05 represents a very good fit. For the proposed model, the root mean square is 0.09.

The squared multiple correlations for Y-variables, which are measures of the strength of linear relationships range between (0.707) for personal involvement and (0.097) for recognition of the legal rights of AIDS patients. However, the total coefficient of determination for Y-variables, a measure of the strength of all Y-variables jointly is (0.998). Further, the highest and lowest squared multiple correlations for X-variables are associated with the variables education (0.997) and ethnicity (0.016) respectively. Total coefficient of determination for X-variables is a high (0.999). The squared multiple correlations for the structural equations range between (0.622) and (0.044) for acceptance of people with AIDS and AIDS level of knowledge respectively. The total coefficient of determination for the structural equations is a low (0.119).

Both squared multiple correlations and total coefficient of determinations range from 0.00 to 1.00 and the closer to 1.00 the stronger the relationship consequently the better the model. Furthermore, for models involving latent variables, both measures can be regarded as references to the reliability of the measurement and structural models. The squared multiple correlation is an indication of the reliability of each observed measure with respect to its underlying true variable and the coefficient of determination is an indication of the strength of the observed indicators, in combination, as measuring devices for all the latent variables jointly (See Table 2).

An examination of the solution is largely determined by assessing the estimates of the proposed model which are presented as the direct effects, indirect and total effects of the estimated path coefficients.

The path coefficients for all the paths in the proposed model are presented in Figure 2. It was hypothesized that all estimated coefficients are significantly different from zero at the 0.05 level. LISREL generates an output labeled "T-Values." They are coefficient estimates divided by their respective

standard errors and indicate the number of sampling distribution standard deviations the estimates are far from zero. Therefore, they can be used to determine whether the coefficient estimates are significantly different from zero or not. In Figure 2, γ_{12}, β_{31}, β_{43}, β_{54} and β_{64} are not significantly different from zero. Their respective probability values are 0.2033, 0.3483, 0.061, 0.1492 and 0.1292. Although the values of γ_{12} and β_{31} are very low, the values of β_{43} and β_{54} are relatively reasonable while the value of β_{64} is noticeably high.

Hayduk (1987) provides a basis for interpretation of direct effects. The interpretation of each path coefficient from one latent variable to another is defined as the number of standard deviations change in an η expected to follow a one standard deviation increase in another ξ or η. Conversely, if the path coefficient is negative, one standard deviation increase in the casual variable is followed by a decrease in variance equal to that path coefficient. For instance, one standard deviation increase in AIDS information seeking is expected to lead to an increase of .70 standard deviations in AIDS information processing.

The amount of variance explained in each endogenous latent variable varied. Again based on Hayduk's interpretations, "Y variance corresponding to each η gives the proportion of error variance in the prediction of that η. Equivalently 1 - Y's gives the proportion of variance in the η explained by the whole model" (Hayduk, 1987, p. 184). Only 4%, 5% and 10% of the amount of variance in AIDS level of knowledge, AIDS involvement and empathic concern for people with AIDS, respectively, are explained. The amount of variance explained in AIDS information processing is 49% and 51% for AIDS information seeking. The major dependent variable of the study, acceptance of people with AIDS, has the highest amount of variance explained which is 62%.

The indirect effects of latent exogenous variables on latent endogenous variables are possible only through other intervening true variables. Indirect effects of length two or more paths, therefore, have a Γ coefficient as their direct effect and all subsequent effects as B coefficients. For the proposed model, the largest indirect effect of an exogenous variable on an endogenous variable is introduced by AIDS message exposure on AIDS information seeking (0.089), and the smallest indirect effect is the influence of AIDS message exposure on empathic concern for people living with AIDS (0.003).

The indirect effects of endogenous variables on one another is defined as the sum of the product of the coefficients constituting a route between two variables

or more (Hayduk, 1987). AIDS involvement and empathic concern each has an indirect effect of (0.83) and (0.391), respectively, on AIDS information processing. Other considerably high indirect effects are introduced by AIDS level of knowledge on AIDS information seeking (0.126), AIDS information processing (0.129), through empathic concern for people with AIDS reciprocal influence, and acceptance of people with AIDS (0.113) through empathic concern for people with AIDS.

The direct effects of η's, endogenous latent variables, on the Y's are provided by the Λ_y, while the indirect effects of η's on the Y's are filtered through the total effects of each η on the other η's and down to the Y's. The indirect effects of η's on the Y's for the proposed model are rather large which is another indication of the robustness of the measurement equations and their relatively high reliabilities reflected by their respective squared multiple correlations and the total coefficients of determination.

The total effects of exogenous latent variables on the endogenous counterparts are defined as the sum of the direct effects Γ and indirect effects of exogenous latent concepts on endogenous latent constructs. The largest total effects are provided by the effects of AIDS message exposure (0.11) and demographic characteristics (-.148) on AIDS involvement and AIDS information processing respectively.

Similarly, total effects of the endogenous latent variables on one another are defined as the sum of the direct effects B plus their indirect effects. Usually, there is no direct effects of an η on itself, but there may be a total effect of each η on itself in non-recursive models due to the cycle of a causal chain going from one η to other η's and back to the original η. The largest total effect in the proposed model is the influence of AIDS information seeking on AIDS information processing (1.044); followed by the influence of AIDS involvement on AIDS information seeking (0.805); the influence of AIDS level of knowledge on acceptance of people with AIDS (0.723); and the influence of AIDS involvement on AIDS information processing (0.720). Moderate total effects are associated with the influence of empathic concern for AIDS patients on AIDS information processing (0.391), AIDS information seeking (0.379) and acceptance of AIDS patients (0.340). The total effects of AIDS level of knowledge on empathic concern for AIDS patients is also noticeable (0.335).

Path Analysis of Modified Model

Two of the empirical indicators of the proposed model have been excluded from the path analytic model of the modified model. Those included indicators of ethnicity and the general indicator of AIDS involvement. Both indicators loaded poorly on their respective theoretical concepts in the initial confirmatory factor analytic endeavor undertaken before attempting to fit the proposed model. Further, they loaded poorly in the proposed model.

The modified model represents an adequate fit despite the fact that the chi-square is highly significant. Large sample sizes tend to produce significant χ^2, like other tests of significance, not because the fit between S and Σ is bad, but because even smaller differences are considered more than mere sampling fluctuations (Hayduk, 1987). Generally, the ratio of chi-square to degrees of freedom has been used to determine the adequacy of the fit. The ratio of chi-square to degrees of freedom of the modified model is 1.68. However, the use of this ratio has been refuted by Hoelter (1983) who developed an approach called the "critical-N," which is based on the sample size rather than the traditional ratio indicator. The "critical-N" approach was adapted by LISREL by simply indicating in the model card of the analysis that the sample size is 200 rather than the actual large sample size. Applying this method with the modified model resulted in a nonsignificant chi-square (χ^2 = 102.11, *df* = 139, p = .992). These results provide strong indications of the adequacy of the fit of the modified model to the empirical data.

The goodness-of-fit index of the modified model is 0.948 and the adjusted goodness-of-fit is 0.928. The root mean square residual is 0.045. Comparing these three indices in the two models, the modified model has the advantage over all three indicators and hence a better fit to the data. Further, statistical evidence for the degree of improvement of the modified model can be provided by comparing the change in χ^2 from the proposed model to the modified model. The change is also a χ^2 statistic with degrees of freedom equal to the difference in degrees of freedom of the proposed and modified models. The difference is: chi-square = chi-square$_1$ - chi-square$_2$ = 454.60 - 233.97 = 220.63 with 40 degrees of freedom. The respecification in the modified model provided a test statistic significant at the 0.000 level.

The modified model does not depart much from the proposed model. Two B's, β_{31} and β_{54}, and one Γ, γ_{12}, were eliminated from the proposed model, while two Γ's were added to the modified model. Two directional B's were

also added as well as one reciprocal B. Further, one B, β_{25} reversed its direction. All parameter estimates of the modified model are presented in Figure 3. All B's, Γ's, and factor loadings of the empirical indicators are statistically significant at the 0.05 level or less.

In the modified model, AIDS message exposure directly influences both AIDS involvement (0.14) and AIDS information seeking (0.36), while demographic characteristics directly influence AIDS information seeking (0.47) and AIDS level of knowledge (0.26). AIDS involvement influences AIDS information seeking (0.23). AIDS information seeking is directly linked to AIDS information processing (0.78), AIDS level of knowledge (0.51) and empathic concern for people with AIDS (0.48). AIDS information processing has a direct negative effect on AIDS level of knowledge (-0.39). AIDS level of knowledge has a reciprocal direct link with AIDS involvement (0.17) and AIDS information seeking (0.65) as well as a direct influence on acceptance of people with AIDS (0.51). Empathic concern for people with AIDS influences both AIDS information processing (0.39) and acceptance of people with AIDS (0.24).

There are noticeable improvements in the observed indicators of the conceptual constructs of the modified model. The highest factor loading is associated with personal involvement (0.994) and the lowest is related to recognition of the legal rights of people with AIDS (0.309). Both measures, as well as the other loadings in the modified model, indicate increments over the proposed model (See Figure 3).

Squared multiple correlations and total coefficients of determination of the modified model also provide clear indications of improvement over the proposed model. For instance, the total coefficient of determination of the modified model is (0.682) as opposed to its counterpart in the proposed model which was (0.119) (See Table 2).

There are changes in the amount of variances explained by the modified model. Although only 7% and 18% of the variances of AIDS involvement and empathic concern for AIDS patients, respectively, are explained, the portions of the explained variances of the other theoretical concepts are noticeably great. The explained variances are 79%, 41%, 52% and 53% for AIDS information seeking, AIDS information processing, AIDS level of knowledge and acceptance of people with AIDS respectively.

Conclusion

Discussion

This study is anchored on the dual interest of developing a cognitive model of communicative processes and its application to attaining social change vis-a-vis recognizing the legal, medical and social rights of people with AIDS and positive orientations toward them. Discussion of the results are, however, guided by the former central objective of the study and the modified model presented in Figure 3. The implications of the model will be discussed in the following section.

That the effects of message exposure are enhanced by mediating factors, albeit not a peculiarly novel finding, reflects the general theoretical assumption of the tested model (Klapper, 1960; Grunig & Childers, 1988; Chaffee & Roser, 1986). However, the results provide a complex network of relationships. Such portrayal of relations is probably more representative and indicative of the complexity of communication processes than the simplistic descriptive results provided by several previous communication studies using bivariate analyses. Message exposure clearly raises the level of issue involvement. It has been argued earlier that an audience exposes himself to the media to enhance his observing capabilities of his environments, and with the creative utilization of other available characteristics such as expectations, goals and reorientations, he augments his cognizing abilities for future experiences (Carter, 1990a, 1990b). Further, as a result of message exposure, propensity for active information seeking is also increased. Although education seems to be a necessary condition for the integration of media messages to an audience's knowledge base, it negatively affects the level of information processing. In other words, to the extent that an audience achieves a higher level of education, he is less likely to pay attention to media messages. This finding is perhaps a reflection of a perception about the shallowness of media reports of complex issues or a ceiling effect associated with some topics in the area of risk communication.

The level of issue involvement is directly and positively related to active issue information seeking and indirectly and significantly linked with issue information processing. Although this study failed to confirm the hypothesis that issue involvement is directly related to issue information processing, several theoretical formulations (Petty & Cacioppo, 1981; Grunig, 1966; Grunig & Childers, 1988) and a substantial amount of recent research has addressed this important theoretical link (Chaffee & Roser, 1986; Grunig &

Childers,1988; Petty and Cacioppo, 1979). Perhaps one of the peculiarly interesting findings of the study is the notion that to the extent that one knows about an issue, he is more likely to be involved as suggested by the relationship between the two variables (See Figure 3).

Another interesting unhypothesized finding is the reciprocal link between issue information seeking and the level of knowledge about that issue. It seems that those who know more about an issue are more likely to actively seek more information about that issue and vice versa. The strong relationship is perhaps indicative of the fact that a partial satisfaction of an interest in an issue leads to further active search. Further, active information seekers are more empathically concerned about people with AIDS.

A third unexpected finding is that the more empathically concerned are more likely to process AIDS media messages. Interestingly, the model does not suggest that AIDS information processing influences empathic concern by any means due to the negative link between AIDS information processing and AIDS level of knowledge. However, the model seems to suggest, as indicated earlier, that education is necessary for the integration of media content to an individual's knowledge base. Given the fact that the sample of the study is relatively more educated than the general population of the nation, it seems the knowledge gap hypothesis is operative in this situation, and therefore, the finding probably reflects a ceiling effect . Further, there is so little information about AIDS in most available media outlets in the area that respondents opt not to pay attention to media messages about AIDS which is also indicative of a ceiling effect.

Both level of knowledge and empathic concern are positively related to acceptance of people with AIDS. Although level of knowledge is not directly linked with empathic concern, the total effects of level of knowledge on empathic concern through the reciprocal link between AIDS level of knowledge and AIDS information seeking is substantial. This finding suggests significant policy implications. Particularly, that the mass media should not be discounted from playing a major role in combating prejudices against the legal, social and medical rights of people with AIDS as well as negative attitudes toward them.

It must be noted, however, that the modified model is not a test of the hypothesis advanced in this study. It is rather, at best, a post hoc analysis based on the available data and that this final model be cross-validated, as a new hypothesis, on a different data set collected for that particular purpose. Further, the significance of the partial support for the original

hypothesis is a great contribution that need not be undermined and upon which further studies can be conducted.

Implications

If the arguments that empathic concern is nurtured (Piaget, 1970), that "it is a response to another's affective state either alone or in a situation" (Deutsch & Madle, 1975, p. 272) and that it exerts altruistic (Coke, Batson & McDavis, 1978) and/or egoistic forces (Batson et al. 1986) on individuals to provide support to a person experiencing pain, pleasure (Krebs, 1975) or illness (Piliavin, Rodin & Piliavin, 1969) are valid, the results of the present study bear significant policy implications regarding the acceptance of people with AIDS as a social problem.

Ameliorating some types of social problems which depend on a knowledge base such as combating crime (O'Keefe, 1985), family planning (Brown, Waszak & Childers, 1989) and healthy lifestyles (Chaffee & Schleuder, 1986) through media campaigns, which are well recognized forms of social action, have been documented. The pivotal arguments of media messages, therefore, should be, as Elliott et al. (1991) put it:

> tapping people's empathic feelings toward people with AIDS. Media message creators might be advised to portray people with AIDS as regular people--people with families, friends, jobs, responsibilities and problems. Such portrayals would allow the identification necessary for an empathic response (Elliott et al., 1991, p. 10).

In retrospect, the arguments that social, economic and ethical problems as well as stigmatization of people with AIDS can be eased through education (Herek & Glunt, 1988; Krupka & Vener, 1988) can easily be refuted. A case in mind is racial discrimination. The availability of a knowledge base concerning its moral, social and economic injurious consequences does not necessarily vitiate let alone eliminate its exercise. On the other hand, Elliott et al. (1991) fall short of providing an adequate recommendation, at least as a short term solution. Media message creators may not perceive a moral mandate to portray people with AIDS in a positive light or that the market dynamics of a competitive capitalist environment can easily steer message creators away from being perceived as advocates of people with AIDS rights. Because the notion of advocate journalists cannot be harmoniously juxtaposed with the philosophy of objectivity in media reporting. Portrayal of people with AIDS in feature

movies, however, is acceptable but the perpetual production of such materials is very questionable.

A viable course in the process of ameliorating social problems of AIDS patients is, therefore, social action. Such social action may take the form of a public service advertising campaign. The findings of this study as well as previous investigations provide empirical evidence as to the types of effects media are capable of exerting on individual and social behavior (Chaffee, 1981; O'Keefe & Atwood, 1981; Atwood, 1991). Further, a similar public service advertising campaign was studied by O'Keefe (1985) and was found to have achieved its objectives. "Take a Bite Out of Crime" attained "promoting citizen involvement in crime prevention efforts, mainly through increased burglary self-protection, and most notably through neighborhood cooperative efforts among citizens" (O'Keefe, 1985, p. 150).

The campaign for people with AIDS protection, however, needs to incorporate Elliott et al.'s (1991) notion of "tapping people's empathic feelings toward people with AIDS" in its messages. Specifically, the campaign should address the social, medical and legal rights of AIDS patients by portraying them in positive lights and dispelling the public's fears about people with AIDS.

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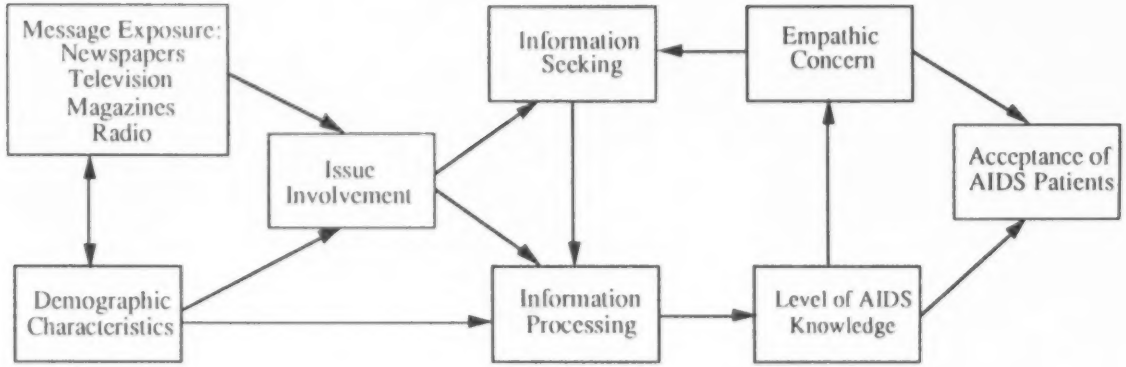

Figure 1: A cognitive model of Communication Processes and Acceptance of People with AIDS

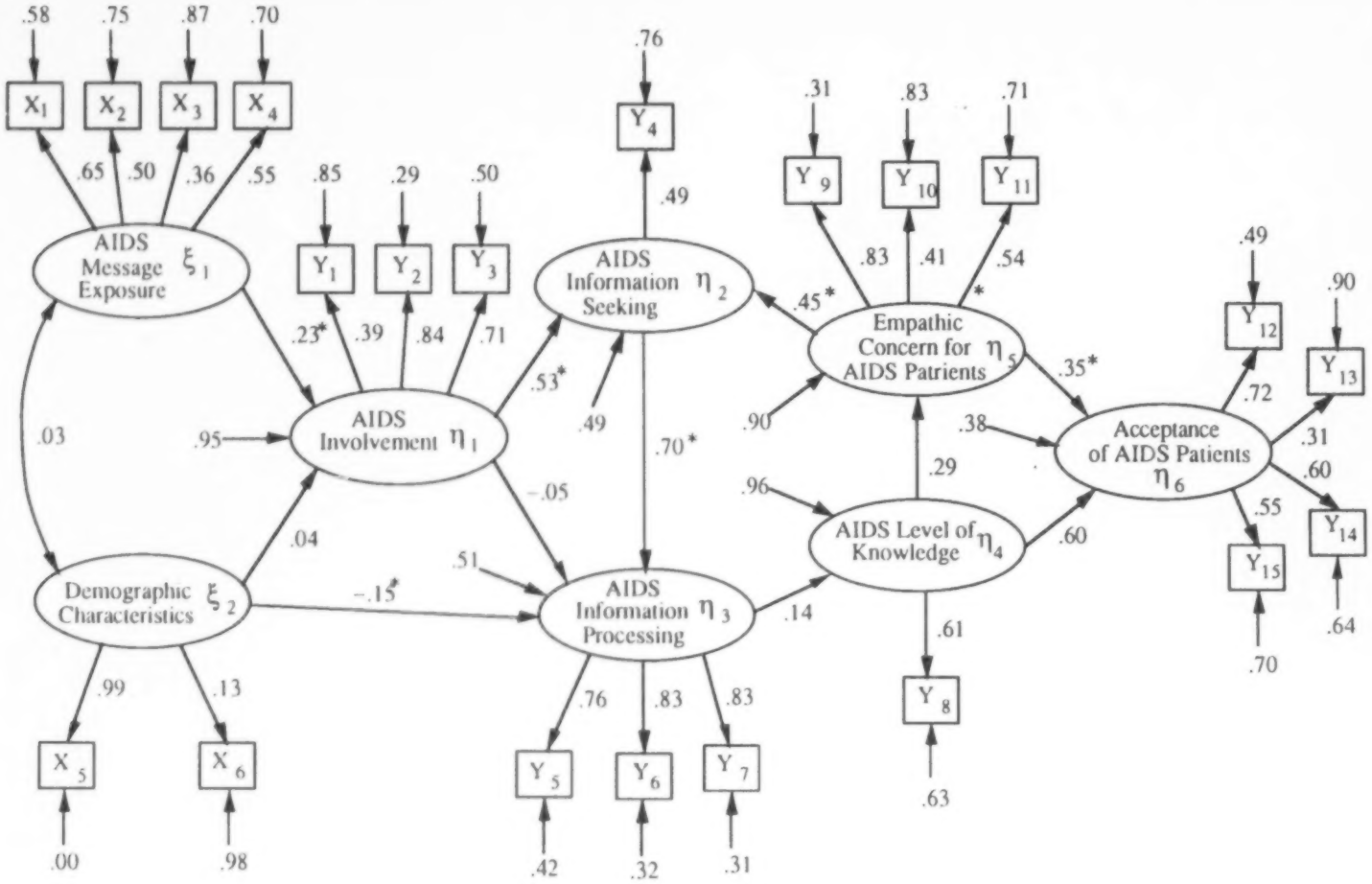

Figure 2. Path Coefficients for the Proposed Model

* Statistically Significant Betas and Gammas

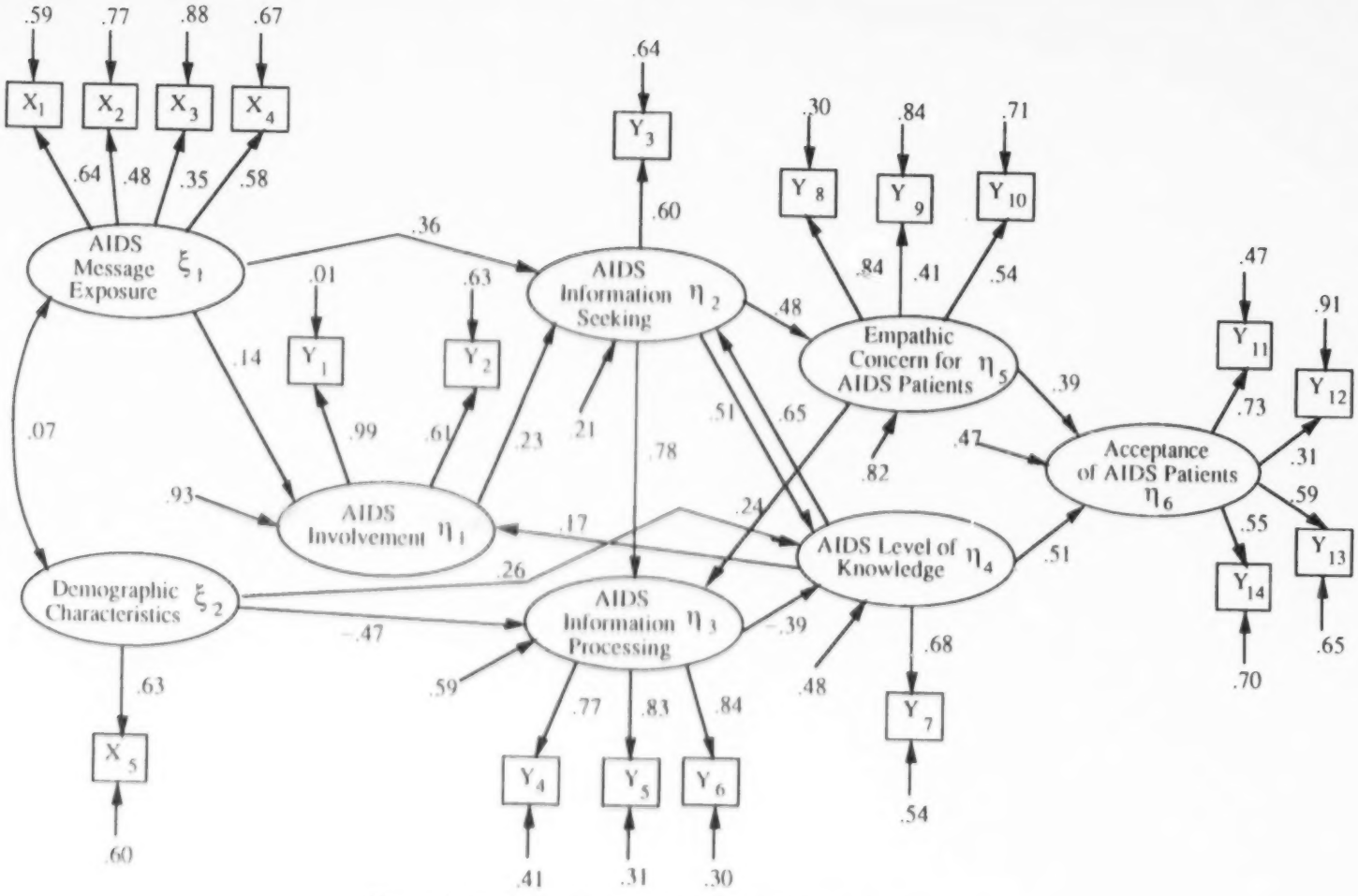

Figure 3. Path Coefficients for the Modified Model

where

X_1 = perceived amount of readership about AIDS in newspapers,

X_2 = perceived amount of viewing AIDS information from television,

X_3 = perceived amount of hearing about AIDS from radio,

X_4 = perceived amount of readership about AIDS in magazines,

X_5 = education,

X_6 = ethnicity,

Y_1 = perceived amount of effect on community,

Y_2 = perceived amount of effect on respondent,

Y_3 = perceived amount of effect on someone close to respondent,

Y_4 = perceived information seeking from various sources,

Y_5 = perceived information processing of print materials,

Y_6 = perceived information processing of ads and commercials,

Y_7 = perceived information processing of television news programs,

Y_8 = perceived level of information about AIDS,

Y_9 = perceived degree of empathic concern for people with AIDS1,

Y_{10} = perceived degree of empathic concern for people with AIDS2,

Y_{11} = perceived degree of empathic concern for people with AIDS3,

Y_{12} = perceived attitude toward people with AIDS,

Y_{13} = perceived degree of concern about the legal rights of people with AIDS,

Y_{14} = perceived degree of concern about the social rights of people with AIDS,

Y_{15} = perceived degree of concern about the medical rights of people with AIDS.

Table 1

Descriptive Statistics for Variables in the Proposed and Modified Models

Variable Name	Mean	S. D.*
Exogenous Variables:		
Newspapers AIDS Exposure	3.22	1.20
Television AIDS Exposure	3.48	1.19
Radio AIDS Exposure	2.02	1.13
Magazine AIDS Exposure	2.76	1.38
Education	----	----
Ethnic	----	----
Endogenous Variables:		
General Involvement	3.61	0.95
Personal Involvement	2.95	1.41
Relatives' Involvement	3.13	1.48
Information Seeking	2.58	1.13
Info. Processing of Print	3.57	1.07
Info. Processing of TV	3.62	1.17
Info. Processing of Ads	3.49	1.03
Level of Knowledge	2.58	1.13
Empathic 1 (All AIDS Patients)	4.20	0.80
Empathic 2 (Low Risk Patients)	4.66	0.54
Empathic 3 (High Risk Patients)	3.47	1.28
Acceptance 1 (Attitudes)	4.07	0.82
Acceptance 2 (Legal Rights)	3.44	1.16
Acceptance 3 (Social Rights)	3.86	0.87
Acceptance 4 (Medical Rights)	3.81	0.92

*Standard Deviation

Where

X_1 = perceived amount of readership about AIDS in newspapers,

X_2 = perceived amount of hearing about AIDS from television,

X_3 = perceived amount of hearing about AIDS from radio,

X_4 = perceived amount of readership about AIDS in magazines,

X_5 = education,

Y_1 = perceived amount of effect on respondent,

Y_2 = perceived amount of effect on someone close to respondent,

Y_3 = perceived information seeking from various sources,

Y_4 = perceived information processing of print materials,

Y_5 = perceived information processing of ads and commercials,

Y_6 = perceived information processing of television news programs,

Y_7 = perceived level of information about AIDS,

Y_8 = perceived degree of empathic concern for people with AIDS1,

Y_9 = perceived degree of empathic concern for people with AIDS2,

Y_{10} = perceived degree of empathic concern for people with AIDS3,

Y_{11} = perceived attitude toward people with AIDS,

Y_{12} = perceived degree of concern about the legal rights of people with AIDS,

Y_{13} = perceived degree of concern about the social rights of people with AIDS,

Y_{14} = perceived degree of concern about the medical rights of people with AIDS.

Table 2
Squared Multiple Correlations of Measured Indicators and Latent Variables

Variable Name	Proposed Model	Modified Model
Exogenous Variables:		
Newspapers	0.417	0.413
Television	0.250	0.231
Radio	0.127	0.125
Magazine	0.301	0.332
Education	0.997	0.400
Ethnic	0.016	-----
Endogenous Variables:		
General Involvement	0.152	-----
Personal Involvement	0.707	0.988
Relatives' Involvement	0.504	0.374
Information Seeking	0.242	0.358
Info. Processing of Print	0.584	0.586
Info. Processing of TV	0.681	0.688
Info. Processing of Ads	0.695	0.697
Level of Knowledge	0.368	0.461
Empathic 1 (All AIDS Patients)	0.689	0.699
Empathic 2 (Low Risk Patients)	0.171	0.164
Empathic 3 (High Risk Patients)	0.290	0.295
Acceptance 1 (Attitudes)	0.515	0.531
Acceptance 2 (Legal Rights)	0.097	0.095
Acceptance 3 (Social Rights)	0.359	0.350
Acceptance 4 (Medical Rights)	0.298	0.297
Latent Variables		
Involvement	0.055	0.068
Information Seeking	0.506	0.793
Information Processing	0.486	0.413
Level of Knowledge	0.044	0.516
Empathic Concern	0.105	0.179
Acceptance	0.622	0.532

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